Veriton 7900Pro/6900Pro/5900Pro

Service Guide

Service guide files and updates are available on the AIPG/CSD web; for more information, please refer to http://csd.acer.com.tw

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on Verition 7900Pro/6900Pro/5900Pro service guide.

Date	Chapter	Updates

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Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

System Specifications

Overview

Acer Verition 7900Pro/6900Pro/5900Pro are bussiness-ready desktop PCs built with latest high-performance technology for managing demanding workload. The series of products are standalone or network-ready for SMB. They include video and audio features for business multimedia.

Veriton 7900Pro/6900Pro/5900Pro comply with all requirements of Intel vProTM platform. The series of products support Conroe CPU and employ Intel ICH8-DO and Nineveh LAN controller (82566DM).

Features

CPU

- Socket Type : Intel (R) Socket T LGA 775 pin
- Intel (R) CedarMill/Prester/Conroe FSB 533/800/1066 MHz
- L2 Cache varies with CPU

Chipset

- Northbridge: Intel (R) Q965
- Southbridge: Intel (R) ICH8DO

Memory

- Socket Type : DDR II so-DIMM,1.8 Voltage
- Socket Quantity : 4
- Capacity support : 256MB ~ 2GB Unbuffered ECC SDRAM module, support dual channel
- Support Memory Speed : DDR II 800/667/533 MHz

On-Board Graphic Solution

- Intel Broadwater-G on die graphic solution
- DVMT technology support
- Dual View function support (by Intel ADD2/ADD2+)
- 1 VGA port on rear side (co-lay for DVI-I required for Vista premium)

PCI Express/PCI Slot

- Slot Type: PCI Express X16
- Slot Quantity: 1
- Slot Type: PCI Express X1
- Slot Quantity: 1
- Slot Type: PCI 2.3 slot
- Slot Quantity: 2

SATA IDE

- Slot Type: SATA IDE slot
- Slot Quantity : 6
- Storage Type Support : HDD/CD-ROM/DVD-ROM/DVD-RW/DVD+RW/DVD Dual/DVD SuperMultiPlus

Audio

- Codec : Realtek ALC888
- Compliant with Microsoft's UAA (Universal Audio Architecture) support (rear only)
- 7.1+2 Channel Audio Support (ALC833 codec series provide 10 DAC channels that simultaneously suppport 7.1 soud playback, plus 2 channels of independent stereo sound output through the front panel stereo output).
- 16/20/24 bit S/PDIF-OUT supports 44.1K/48K/96K/192KHz sample rate; 16/20/24bit S/PDIF-IN supports 44.1K/48K/96KHz sample rate
- Reserved disable function on BIOS side. Default is enabled.

LAN

- Controller : PCI-E Giga LAN chip with manageability function
- LAN Chip : Intel(R) Nineveh 82566DM
- Reserved disable functionon BISO side. Default is enabled. (Intel (R) Nineveh LAN doesn't support LAN disable function via HW GPIO)
- Should be worked under 10/100/1000 Mbs environment

USB

- Controller : Intel (R) ICH8DO
- Connectors Quantity : 10
- On-board (for non-1394 SKU): 10 ports, 4 for front daughter board, 4 for rear I/O (2 co-lay with rear I/O, under RJ45 port), 2 reserved header
- USB 2.0/1.1

System LED Definition

- Power state LED
  - S0: Blue Steady
  - S1/S3: Blue Blinking
  - S4/S5: Off
- Storage state LED
  - IDE active: Blue Blinking
  - IDE idle: Off
- LAN state LED
  - LAN active: Blue Blinking
  - LAN idle: Off

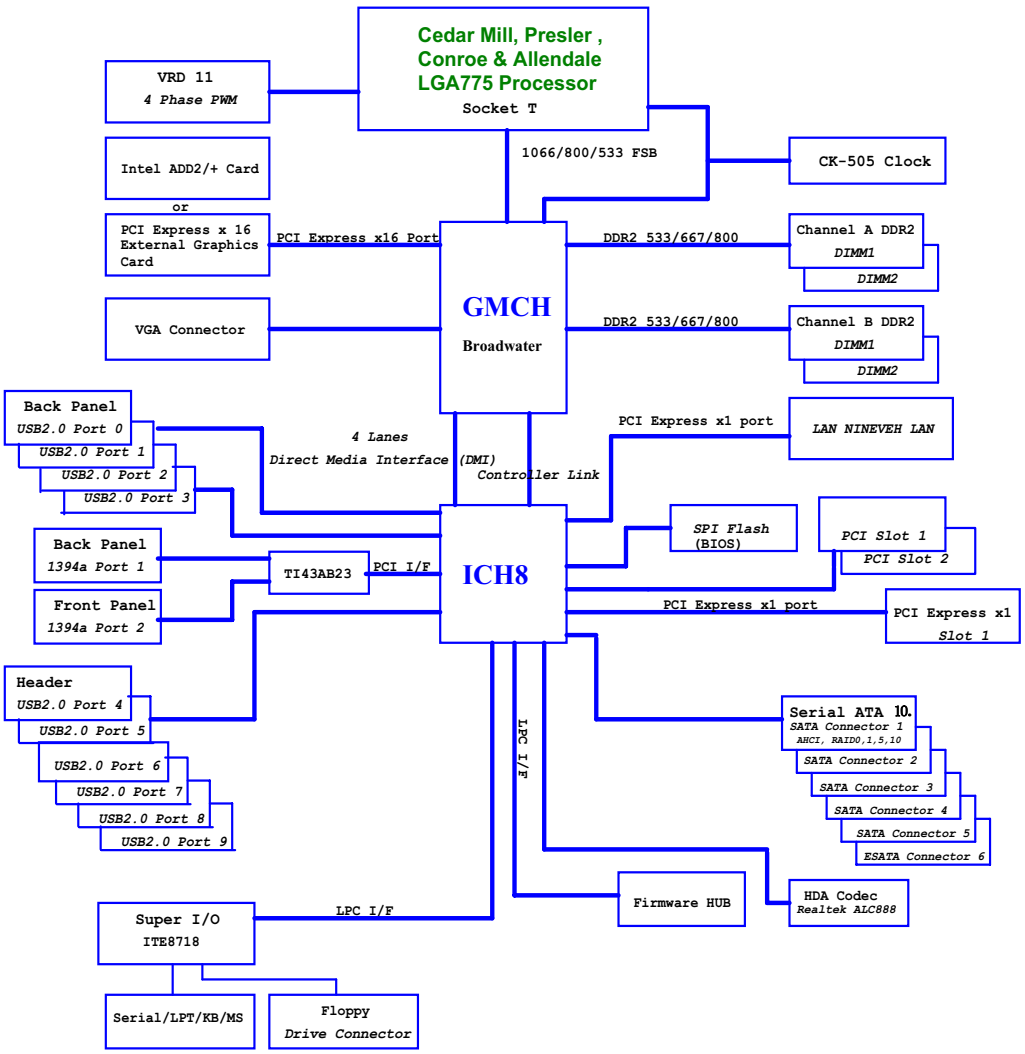
On-Board Connector

- Rear I/O Connectors
  - 1 PS/2 Keyboard port
  - 1 PS/2 Mouse port
  - 1 Parallel port
  - 1 Serial port
  - 1 VGA (CRT) port (or DVI-I for Vista Premium SKU)
  - 1 RJ45 LAN port
  - 4 USB ports

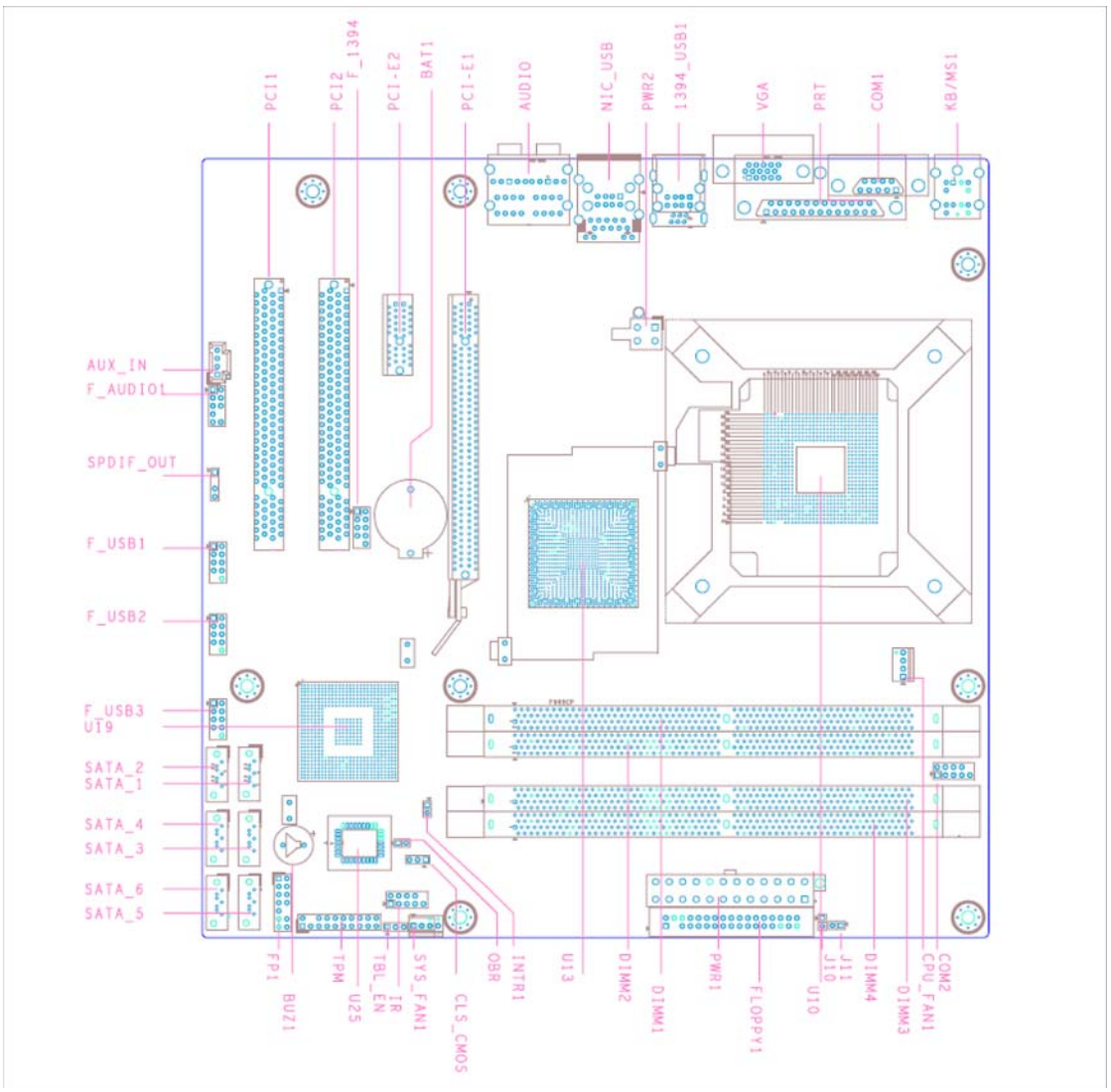
- 7.1 channel phone jack (6 audio jacks, with MIC in, Line-in definition)

- On-Board Connectos
  - 1 CPU Socket
  - 4 DDR2 Memory Socket
  - 1 PCIE x16 slot
  - 1PCIE x1 slot
  - 2 PCI slots
  - 1FDD slot
  - 6 SATA2 IDE connectors
  - 3 2*5 pin Intel FPIO specification USB pin connectors (follow Intel (R) FPIO standard specification)
  - 1 2*5 pin Intel (R) FPIO spec. Microphone In/Headphone Out pin connectors
  - 1 serial prot 2*5 pin connector (2nd serial port)
  - 1Aux-in 4 pin connector
  - 14 pin CPU fan connector
  - 13 pin system FAN connector with linear circuit
  - 12 pin Intrusion Alam connector
  - 1 24 pin+4pin ATX interface PS3/PS2 SPS connector
  - 1 2*7 pin front panel IO header
  - 2 reserved 2 pin GPIO connector
  - 2 reserved USB header
  - 1 on board buzzer
  - 1 2-pin OBR header
  - 1 2*5 pin connector (2nd serial port)

System Block Diagram



Main Board Layout



1	CPU_FAN1	CPU fan header	24	BIOS_SEL1	SPI & FWH BIOS select
2	COM2	COM Header 2	25	PWR2	4 pin power connector
3	J11	Acer special requirement	26	KB/MS1	Keyboard & Mouse PS2 port
4	J10	Acer special requirement	27	COM1	COM port
5	PWR1	24 pin power connector	28	PRT	Printer port
6	FLOPPY1	Floppy connector 1	29	VGA	VGA port
7	SYS_FAN1_1	System fan header 1_1(3 pin)	30	1394_USB1	1394 and USB*2 ports
8	CLR_CMOS	Clear CMOS	31	NIC_USB	Lan and USB*2 port
9	OBR	One Button Recovery	32	Audio	Audio port
10	INTR1	Chassis Intruder	33	PCI-E1	PCI-Express X16 connector
11	FP1	Front Panel Switch/LED	34	BAT1	Battery connector
12	TPM	Trusted Platform Module Interface	35	PCI-E2	PCI-Express X1 connector

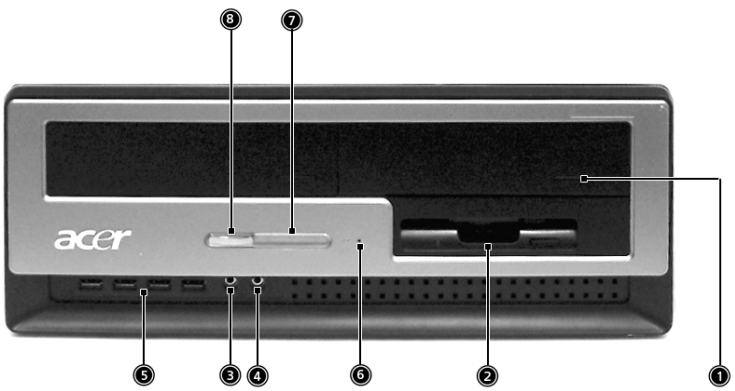
13	SATA_5	SATA data transfer connector 5	36	F_1394	Front 1394 header
14	SATA_6	SATA data transfer connector 6	37	PCI1, PCI2	PCI connector
15	SATA_3	SATA data transfer connector 3	38	U25	FWH BIOS socket
16	SATA_4	SATA data transfer connector 4	39	U19	ICH8 series south bridge
17	SATA_1	SATA data transfer connector 1	40	U13	965 series nouth bridge
18	SATA_2	SATA data transfer connector 2	41	U10	LGA775 CPU socket
19	F_USB3	Front panel USB header 3	42	DIMM1,DIMM2,DIMM3,DIMM4	DDR2 memory connector
20	F_USB2	Front panel USB header 2	43	IR	Infrared function header
21	F_USB1	Front panel USB header 1‘	44	FLOPPY1	Floopy connector
22	F_AUDIO1	Front panel Audio header	45	BUZ1	Buzzer
23	AUX_IN	Audio Aux input			

Your Acer Desktop tour

After knowing your computer features, let us show you around your new Veriton series computer.

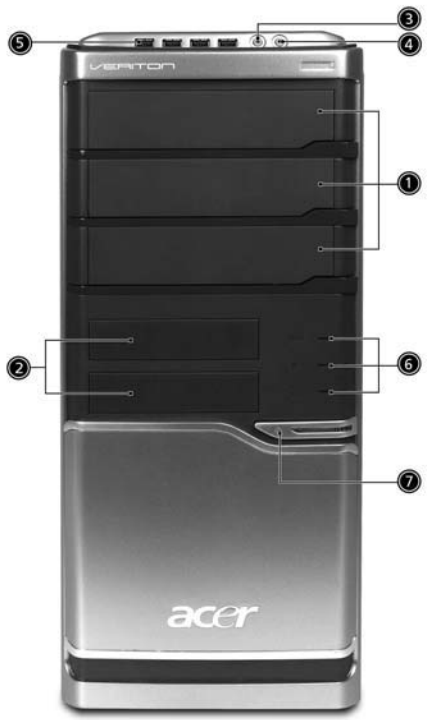
Front panel

Veriton 5900Pro front view



Veriton 6900Pro front view

Veriton 7900Pro front view

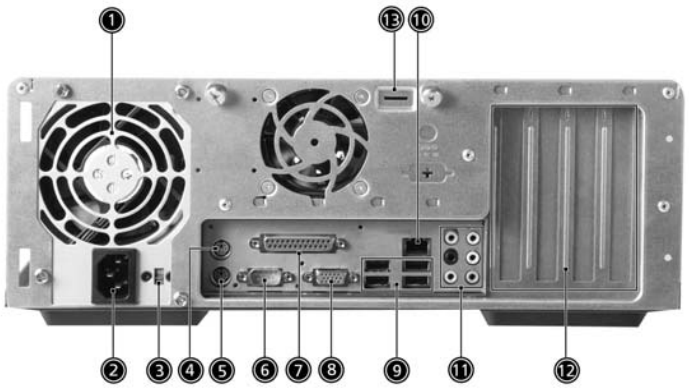


Veriton 5900Pro	Veriton 6900Pro/ 7900Pro	Icon	Component	Description
1	1		5.25” drive bay(s)	
2	2		3.5 floppy drive	
3	3		Microphone-in jack (front)	Accepts input from external microphones.
4	4		Speaker-out/line-out port	Connects to audio line-out devices (e.g., speakers).
5	5		USB ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
6			Hardware reset button	
7	6		Indicators	
8	7		Power button	Power on or off the system.
	1		Optical disk drive (for selected models)	Accepts CDs or DVDs.
	2		Eject button	Ejects optical disks.

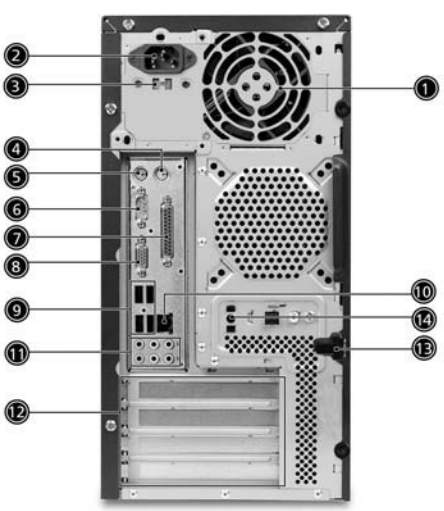
	3		Power button	Power on or off the system.
	4		Hard disk drive indicator	Lights to indicate hard disk drive status.
	5		Optical disk drive indicator	Lights to Indicate optical disk drive status.
	6		LAN indicator	Press to enable/disable Wireless function. Lights to indicate the status of wireless LAN communications.
	7		USB ports	
	8		Microophone-in jack (front)	
	9		Headphone/Speaker-out/line-out port	
	10/11		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman).

Rear panel

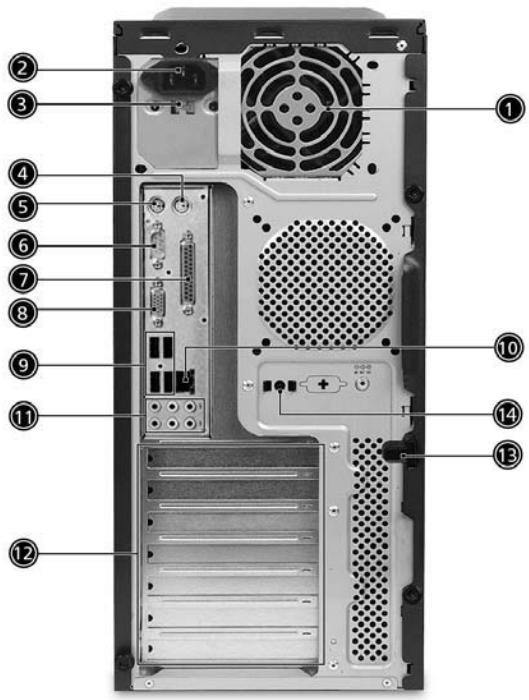
Veriton 5900Pro rear view



Veriton 6900Pro rear view



Veriton 7900Pro rear view



#	Icon	Component	Description
1		Power supply	
2		Power coard socket	Connects to a power cord.
3		Voltage selector switch	
4		PS/2 mouse port	Accepts input from PS/2 mouses.
5		PS/2 keyboard port	Accepts input from PS/2 keyboards.
6		Serial port	Connects to a serial device (e.g., external serial mouse or keyboard).
7		Parallel/printer port	Connects to a parallel device (e.g., printer).
8		CRT/LCD monitor port	Connects to a display device (e.g., external monitor, LCD projector).
9		USB ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
10			

11			
12			
13			
14			
1		Ventilation slots	Enable the computer to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.
2		USB ports	
3	DVI-D	DVI por	Supports digital video connections.
4		CRT/LCD monitor port	
5		DC-in jack	Connects to an AC adapter.
6		OBR (One Button Recovery) button	
7		Network port	Lights to indicate the status of wireless LAN communications.
8		Mic-in jack	Accepts input from external microphones.
9		Line-out jack	
10/11		Kensington lock	Connects to a Kensington-compatible computer security lock.

Audio Jack Function Table

Color/Use	Headphone	1.1 CH	3.1 CH	5.1 CH	7.1 CH
Blue	Line-in	Line-in	Line-in	Line-in	Line-in
Green	Headphone	Line-out	Front	Front	Front
Pink	N/A	Mic-in	Mic-in	Mic-in	Mic-in
Orange	N/A	N/A	N/A	Rear	Rear
Black	N/A	N/A	Center & woofer	Center & woofer	Center & woofer
Gray	N/A	N/A	N/A	N/A	Side

System Peripherals

The Aspire T630 and AcerPower F3 computer consist of the system itself, and system peripherals, like a mouse, keyboard and a set of speakers (optional). This section provides a brief description of the basic system peripherals.

Mouse (PS/2 or USB, manufacturing option)

The included mouse is a standard two-button wheel mouse. Connect the mouse to the PS/2 mouse port or USB port on the back panel of the system.

Keyboard (PS/2 or USB, manufacturing option)

Connect the keyboard to the PS/2 keyboard port or USB port on the back panel of the system.

Speakers

For systems bundled with speakers, before powering on the system, connect the speaker cable to the audio out (external speaker) port on the back panel of the system.

For more detailed information about the speakers, please refer to the included operating instructions.

NOTE: speakers are optional and the appearance might be different depending on the actual product.

Acer Empowering Technology

Acer's innovative Empowering Technology makes it easy for you to access frequently used functions and manage your new Acer notebook. It features the following handy utilities:

- **Acer eSettings Management** accesses system information and adjusts settings easily.
- **Acer eLock Management (for slected models)** limits access to external storage media.
- **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms.
- **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry settings.
- **Acer eAcoustics Management** offers a useful tool to balance your computing power needs with your desired level of quietness.
- **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.
- **Acer eProtection Management** provides exceptional protection against viruses and other malware.

For more information, press the < e > key to launch the Empowering Technology menu, then click on the appropriate utility and select the Help or Tutorial function.

Empowering Technology password

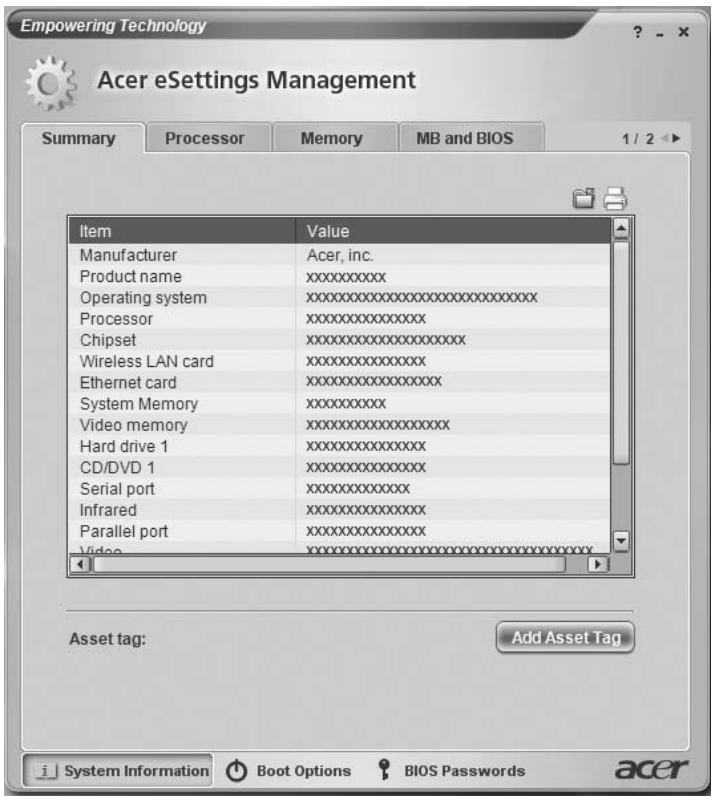
Before using Acer eLock Management and Acer eRecovery Management, you must initalize the Empowering Technology password. Right-click on the Empowering Technology toolbard and select "Password Setup" to do so. If you do not initialize the Empowering Technology password, you will be prompted to do so when running Acer eLock Management or Acer eRecovery Management for the first time.

Acer eSettings Management

Acer eSettings Management allows you to inspect hardware specifications, change BIOS passwords or other Windows settings, and to monitor the system health status.

Acer eSettings Management also:

- Provides a simple graphical user interface for navigating.
- Displays general system status and advanced monitoring for power users on Acer computer.



Acer eLock Management

Acer eLock Management is a security utility that allows you to lock your removable data, optical and floppy drives to ensure that data can't be stolen while your notebook is unattended.

- Removable data devices - includes USB disk drives, USB pen drives, USB flash drives, USB MP3 drives, USB memory card readers, IEEE 1394 disk drives and any other removable disk drives that can be mounted as a file system when plugged into the system.
- Optical drive deivces - includes any kind of CD-ROM or DVD-ROM drives.
- Floppy disk drives - 3.5-inch disks only.
- Interfaces - includes serial ports, parallel port, infrared (IR), and Bletooth.

To activate Acer eLock Management, a password must be set first. Once set, you can apply locks to any of the devices. Lock(s) will immediately be set without any reboot necessary, and will remain locked after rebooting, until unlocked.

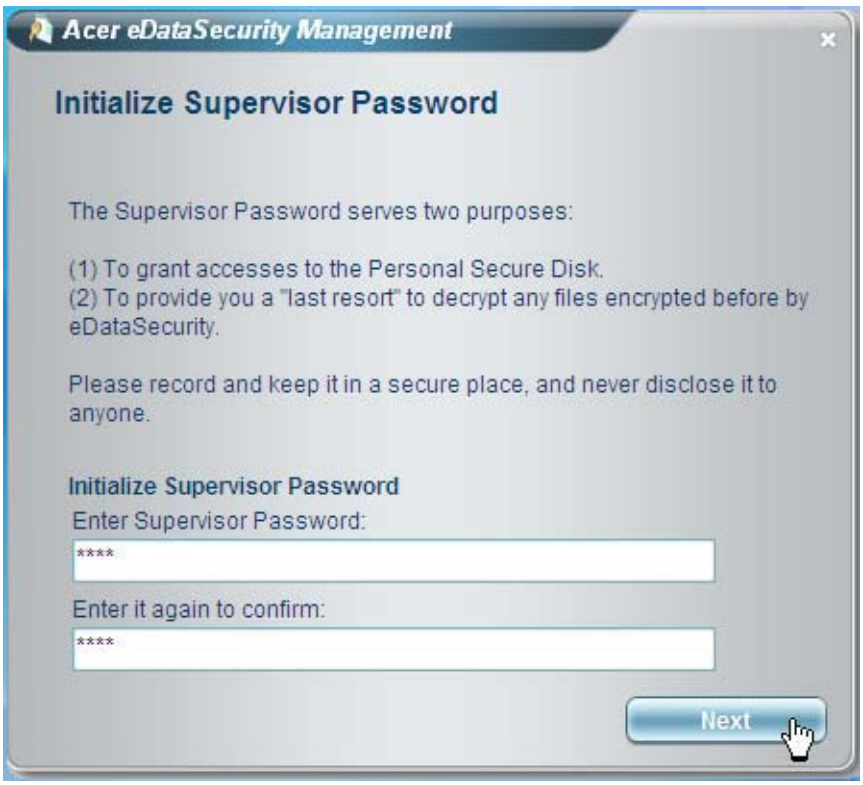
NOTE: If you lose your password, there is no method to reset it except by reformatting your notebook or taking your notebook to anAcer Customer Serivce Center. Be sure to remember or write down your password.

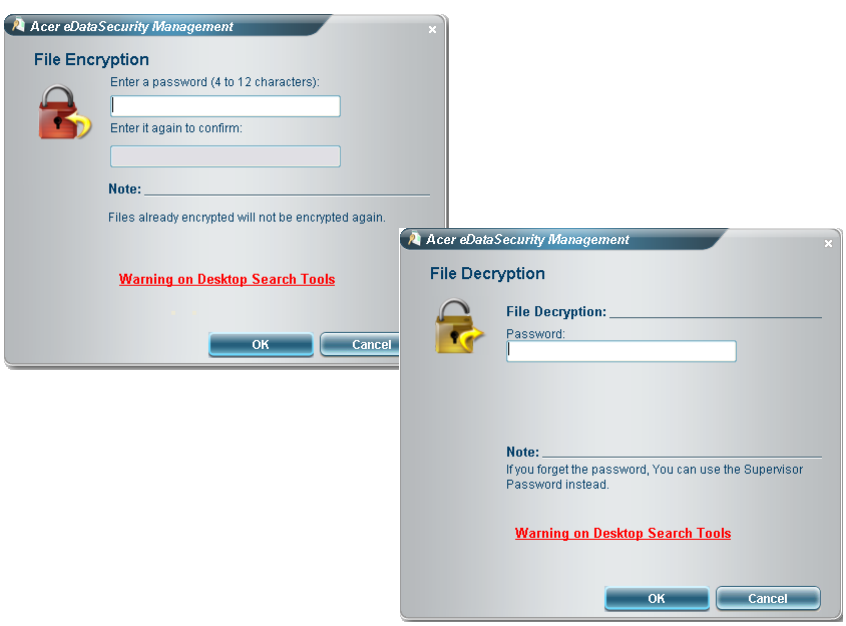
Acer eDataSecurity Management

Acer eDataSecurity Management is handy file encryption utility that protexts your files from being accessed by unauthorized persons. It is conveniently integrated with Windows explorer as a shell extension for quick and easy data encryption/decryption and also supports on-the-fly file encryption for MSN Messager and Microsoft Outlook.

The Acer eDataSecurity Management setup wizard will prompt you for a suvervisor password and default encryption. This encryption will be used to encrypt files by default, or you can choose to enter your won file-specific password when encrypting a file.

NOTE: The password used encrypt a file is the unique key that the system needs to decrypt it. If you lose the password, the supervisor password is the only other key capable of decrypting the file. If you lose both passwords, there will be no way to decrypt your encryped file! **Be sure to safeguard all related passwords!**


Acer eDataSecurity Management
Initialize Supervisor Password
The Supervisor Password serves two purposes:
(1) To grant accesses to the Personal Secure Disk.
(2) To provide you a "last resort" to decrypt any files encrypted before by eDataSecurity.
Please record and keep it in a secure place, and never disclose it to anyone.
Initialize Supervisor Password
Enter Supervisor Password:
****
Enter it again to confirm:
****
Next


Acer eDataSecurity Management
File Encryption
Enter a password (4 to 12 characters):
Enter it again to confirm:
Note:
Files already encrypted will not be encrypted again.
Warning on Desktop Search Tools
OK
Cancel
Acer eDataSecurity Management
File Decryption
File Decryption:
Password:
Note:
If you forget the password, You can use the Supervisor Password instead.
Warning on Desktop Search Tools
OK
Cancel

Acer ePerformance Management

Acer ePerformance Management is a system optimization tool that boosts the performance of your Acer notebook. It provides and express optimization method to release unused memory and disk space quickly. The user can also enable advanced options for full control over the following option:

- Memory optimization - releases unused memory and check usage.
- Disk optimization - removes unneeded items and files.
- Speed optimization - improves the usability and performance of your Windows XP system.

Acer eAcoustics Management

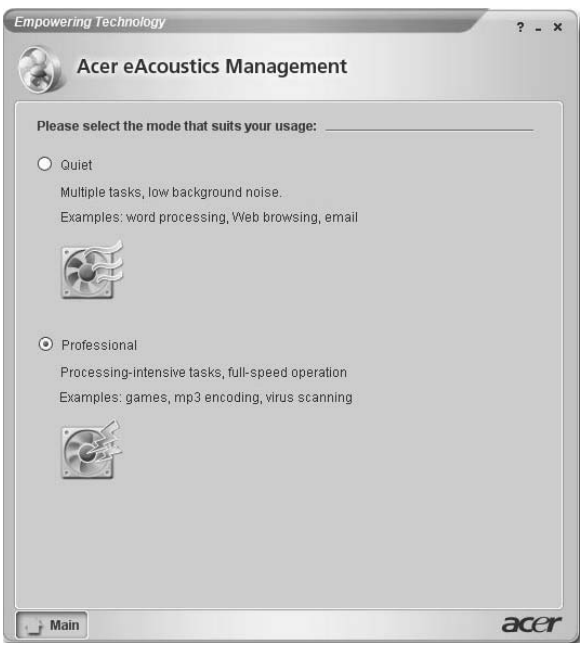
Acer eAcoustics Management offers you a useful tool to balance your computing power needs with your desired level of quietness. By reducing the processor speed for tasks that require less processing, the CPU and system fans can run slower, thus reducing the amount of sound generated by tehse components.

Using Acer eAcoustics Management

To launch Acer eAcoustics Management

- Click on the **Acer eAcoustics Management** icon in the Empowering Technology toolbard shown on your desktop.
- From the Start menu, go to **(All) Programs>Acer Empowering Technology>Acer eAcoustics Management**.

This will open Acer eAcoustics Management main page.



Acer eAcoustics Management Main Page

Listed on the main page are two options for Acer eAcoustics Management, labeled as Quiet and Professional. Select the mode that suits your working requirements best, and exit the utility to apply the settings.

Quiet

Use this mode for tasks that require low processing power, like word processing, Web browsing, and instant messaging. This mode creates the lowest audio disturbance.

Professional Mode

Use this mode for processing-intensive tasks, when you require full-speed operation.

Acer eRecovery Management

Acer eRecovery Management is a powerful utility that does away with the need for recovery disks provided by the manufacturer. The Acer eRecovery Management utility occupies space in a hidden partition on your system's HDD. User-created backups are stored on D:\ drive. Acer eRecovery Management provides you with:

- Password protection.
- Recovery of applications and drivers.
- Image/data backup:
  - Back up to HDD (set recovery point).
  - Back up to CD/DVD.

- Image/data recovery tools:
  - Recover from a hidden partition (factory defaults).
  - Recover from the HDD (most recent user-defined recovery point).
  - Recover from CD/DVD.

For more information, please refer to “Acer eRecovery Management”

NOTE: If your computer did not come with a Recovery CD or System CD, please use Acer eRecovery Management’s “System backup to optical disk” feature to burn a backup image to CD or DVD. To ensure the best results when recovering your system using a CD or Acer eRecovery Management, detach all peripherals (except the external Acer ODD, if your computer has one), including your Acer ezDock.

Hardware Specifications and Configurations

System Board Major Chip

Item	Specification
System Core Logic	North bridge: Intel (R) Q965 South bridge: Intel (R) ICH8DO
Super I/O Controller	ITE IT8718DX
LAN Controller	Intel (R) 82566DM
Memory Controller	Built-in north bridge: Intel Q965
SATA Controller	Built-in ICH8DO
1394 Controller	TI TSB43AB23PDTG4
Audio Controller	Realtek ALC888
VGA Controller	Built-in Intel (R) Q965 (GMCH)
Keyboard Controller	ITE IT8718DX

Processor

Item	Specification
Type	Supports AMD mobile Athlon 64 (62W) M2 Supports AMD Sempron-D (62W) M2
Slot	Socket 940
Speed	Depends on CPU, which is local configured
Bus Frequency	533/800/1066 MHz
Voltage	Processor voltage can be detected by any system without setting any jumper

BIOS

Item	Specification
BIOS code programmer	Award
BIOS version	
BIOS ROM size	4MB
BIOS ROM package	32-pin PLCC package
Support protocol	PCIX 1.0,PCI 2.2,APM 1.2,VESA/DPMS (VBE/PM V1.1), SMBIOS 2.3, E-IDE 1.1, ACPI 1.0b,ESCD1.03, PnP 1.0a, Bootable CD-ROM 1.0, USB 1.1~ USB 2.0, UHCI 1.0, ANSI ATA 3.0 ATAPI
Boot from CD-ROM feature	Yes
Support to LS-120 drive	Yes
Support to BIOS boot block feature	Yes
BIOS Password Control	Yes

BIOS Hotkey List

Hotkey	Function	Description
DEL	Enter BIOS Setup Utility	Press while the system is booting to enter BIOS Setup Utility.

System Memory

Item	Specification
Memory Slot Number	4 Slots
Supported Memory Size per Slot	256 MB ~ 1GB
Supported Maximum Memory Size	4GB
Supported Memory Speed	533/667/800 MHz
Supported memory voltage	1.8V
Support memory module package	240-pin DIMM
Support to parity check feature	Yes
Support to Error Correction Code (ECC) feature	Yes
Memory module combinations	You can install memory modules in any combination as long as they match the above specifications.

Cache Memory

Item	Specification
First-Level Cache Configurations	
Cache function control	Enable/Disable by BIOS Setup
Second-Level Cache Configurations The information below is only applicable to system installed with a Pentium 4 processor	
Tag RAM Location	On Processor
L2 Cache RAM Location	On Processor
L2 Cache RAM type	PBSRAM (Pipelined-burst Synchronous RAM)
L2 Cache RAM size	Depends on CPU, which is local configured
L2 Cache RAM speed	Full of the processor core clock frequency (Advanced Transfer Cache)
L2 Cache function control	Enable/Disable by BIOS Setup
L2 Cache scheme	Fixed in write-back

LAN Interface

Item	Specification
LAN Controller	Intel (R) Nineveh 82566DM
LAN Controller Resident Bus	PCI Express Bus
LAN Port	ONE RJ-45 on board
Function Control	Enable/Disable by BIOS Setup

IDE Interface

Item	Specification
IDE Controller	Built-in nVidia MCP51
IDE Controller Resident Bus	PCI bus
Number 40 pin PATA slot	1
❑ Device Type Support	HDD, CD-ROM, CD-RW, DVD-ROM,Combo,DVD burner
❑ Transfer Rate Support	PIO 0/1/2/3/4
❑ ATA Mode	33/66/100
Number STAT IDE slot	4
❑ Device Type Support	HDD,CD-ROM,CD-RW,DVD-ROM,DVD-RW,DVD+RW,DVD Dual,DVD Supermultiplus
Supports LS-120	Yes
Supports bootable CD-ROM	Yes
Function Control	Enable/Disable by BIOS setup

Serial Port (No serial port for this model)

Item	Specification
Serial port controller	LPC47M182
Serial port controller resident bus	LPC Bus
Number of serial port	1
Serial port location	Rear panel
16550 UART support	Yes
Connector type	9-pin D-type female connector

USB Port

Item	Specification
Universal HCI	USB 2.0/1.1
Controller	Built-in nVidia MCP51
Number of the connectors	8
Location	Rear : 4 Front : 4
USB Class	Support legacy keyboard for legacy mode

Wake-up Event Specifications

Device	S1	S3	S4	S5
Power Button	Enabled	Enabled	Enabled	Enabled
PS2 Keyboard	Disabled	Disabled	Disabled	Disabled
USB Keyboard	Disabled	Disabled	N/A	N/A
PME	Disabled	Disabled	Disabled	Disabled
WOR (wake on Ring)	Disabled	Disabled	Disabled	Disabled
RTC (real time clock)	Disabled	Disabled	Disabled	Disabled

Thermal Design

Item	Description
Thermal Design	❑ Provision for optional secondary fan ❑ Adequate venting in the front of chassis ❑ Adequate venting in the rear of chassis

Memory Address Map

Address	Size	Function
0000000 - 009FFFF	640 KB System Memory	Onboard DRAM
00A0000-00BFFFF	128 KB Video RAM	Reserved for Graphics Display Buffer Non-Cacheable
00C0000-00CFFFF	32 KB I/O Expansion ROM	Reserved for ROM on I/O Adapters
00D0000-00D3FFF	16 KB I/O Expansion ROM	Reserved for ROM on I/O Adapters
00D4000-00D7FFF	16 KB I/O Expansion ROM	Reserved for ROM on I/O Adapters
00D8000-00DBFFF	16 KB I/O Expansion ROM	Reserved for ROM on I/O Adapters
00DC000-00DFFFF	16 KB I/O Expansion ROM	Reserved for ROM on I/O Adapters
00E0000-00E7FFF	32 KB for SCSI BIOS	Reserved for SCSI BIOS
00E8000-00EFFFF	32 KB	Reserved Onboard
00F0000-00FFFFF	64 KB BIOS	System ROM BIOS (ROM) System RAM BIOS (DRAM)
0100000-0F9FFFF	System Memory	Onboard DRAM
0FA0000-0FFFFFF	384 KB I/O Card Memory	Reserved for Memory Map I/O Card Non-Cacheable
1000000-FFFFFFF	System Memory	Onboard DRAM

PCI INTx# and IDSEL Assignment Map

PCI INTx #	PCI Devices	Device IDSEL: ADxx
INTA#	ADIMM-slot	N
INTB#	PCI-Slot1	AD16
INTC#	PCI-Slot2	AD17

I/O Address Map

Hex Range	*Devices*
000-01F	DMA Controller-1
020-021	Interrupt Controller-1
040-043	System Timer
060-060	Keyboard Controller 8742
061-061	System Speaker
070-071	CMOS RAM Address and Real Time Clock
080-08F	DMA Page Register
0A0-0A1	Interrupt Controller-2
0C0-0DF	DMA Controller-2
0F0-0FF	Math Co-Processor
170-177	Secondary IDE
1F0-1F7	Primary IDE
278-27F	Parallel Printer Port 2
2F8-2FF	Serial Asynchronous Port 2
378-37F	Parallel Printer Port 1
3F0-3F5	Floppy Disk Controller
3F6-3F6	Secondary IDE
3F7-3F7	Primary IDE
3F8-3FF	Serial Asynchronous Port 1
0CF8	Configuration Address Register
0CFC	Configuration Data Register
778-77A	Parallel Printer Port 1

IRQ Assignment Map

IRQx	System Devices	Add-On-Card Devices
IRQ0	Timer	N
IRQ1	Keyboard	N
IRQ2	Reserved	N
IRQ3	Serial Port 2	Reserved
IRQ4	Serial Port 1	Reserved
IRQ5	Reserved	Reserved
IRQ6	Floppy Disk	Reserved
IRQ7	Parallel Port	Reserved
IRQ8	Real Time Clock	N
IRQ9	N	Reserved
IRQ10	N	Reserved
IRQ11	N	Reserved
IRQ12	PS/2 Mouse	Reserved
IRQ13	Numeric Processor	N
IRQ14	Embedded Hard Disk	Reserved
IRQ15	Reserved	Reserved

NOTE: N - Not be used

DRQ Assignment Map

DRQx	System Devices	Add-On-Card Devices
DRQ0	N	Reserved
DRQ1	N	Reserved
DRQ2	FDD	N
DRQ3	N	Reserved
DRQ4	Cascade	N
DRQ5	N	Reserved
DRQ6	N	Reserved
DRQ7	N	Reserved

NOTE: N - Not be used

Environmental Requirements

Item	Specifications
Temperature	
Operating	+5°C ~ +35°C
Non-operating	-20 ~ +60°C (Storage package), -10°C~+60°C (un-package)
Humidity	
Operating	15% to 80% RH, non-condensing
Non-operating	10% to 90% RH, non-condensing at 40°C
Vibration	
Operating (unpacked)	5 ~ 500Hz, 2.20g RMS random,10 minutes per axis in all 3 axes
Non-operating (packed)	5 ~ 500Hz, 1.09g RMS random,1 hour per axis in all 3 axes
Shock Operating	Half sine, 2g 11m seconds

Drop Test

Drop Test				
Definition	The protection ability of packing & cushion must be capable of withstanding, with no physical or functional demage, mechanical impact from height-specific drops.			
Test Standard				
Package Cross Weight		**Drop Height**		**Not of Drop**
KGs	lbs	CM	Inch	
0~9.1	0~20	76	30	10
9.1~18.2	20~40	61	24	10
18.2~27.3	40~60	46	18	10
27.3~45.4	60~100	31	12	10
10 drops : one corner, three edges, six surfaces				

Power Management Function (ACPI support function)

Device Standby Mode

- Independent power management timer for hard disk drive devices (0-15 minutes, time step=1 minute).
- Hard disk drive goes into Standby mode (for ATA standard interface).
- Disable V-sync to control the VESA DPMS monitor.
- Resume method: device activated (Keyboard for DOS, keyboard & mouse for Windows).
- Resume recovery time: 3-5 sec.

Global Standby Mode

- Global power management timer (2-120 minutes, time step=10 minute).
- Hard disk drive goes into Standby mode (for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Resume method: Return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- Resume recovery time: 7-10 sec.

Suspend Mode

- Independent power management timer (2-120 minutes, time step=10 minutes) or pushing external switch button.
- CPU goes into SMM.
- CPU asserts STPCLK# and goes into the Stop Grant State.
- LED on the panel turns amber colour.
- Hard disk drive goes into SLEEP mode (for ATA standard interface).
- Disable H-sync and V-sync signals to control the VESA DPMS monitor.
- Ultra I/O and VGA chip go into power saving mode.
- Resume method: Return to original state by pushing external switch button, modem ring in, keyboard and mouse for APM mode.
- Return to original state by pushing external switch button, modem ring in and USB keyboard for ACPI mode.

ACPI

- ACPI specification 1.0b.
- S0, S1, S3 and S5 sleep state support.
- On board device power management support.
- On board device configuration support.

Dual Channel

VT x800 series support the Dual Channel Technology. After operating the dual channel technology, the bandwidth of memory bus will add double up to 4GB/s.

The mainboard inculdes 4 DIMM slots, and each channel has two DIMM sockets as following:

- Channel A : DDR1, DDR3
- Channel B : DDR2 , DDR4

If you want to operate the Dual Channel Technology, please note the following explanations due to the limitation of Intel chipset specifications.

Memory Number		Description
1	Only one DDR memory module is installed ?	The Dual Channel Technology can't operate when only one DDR memory module is installed.
2	Two DDR memory modules are installed (the same memory size and type) ?	The Dual Channel Technology will operate when two memory modules are inserted individually into Channel A and B. If you install two memory modules in the same channel, the Dual Channel Technology will not operate.
3	Three DDR memory modules are installed ?	Pleae note that the Dual Channel Technology will not operate when three DDR memory modules are installed; part of them will not be detected.
4	Four DDR memory modules are installed ?	If you install four memory modules at the same time, the Dual Channel Technology will operate only when those modules have the same size and type.

NOTE: We strongly recommend user to slot two DDR memory modules into the DIMMs with the same color in order for Dual Channel Technology to work.

The following tables include all memory-installed combination types:

Dual Channel Technology (DS: Double Side, SS: Single Side)

	DDR1	DDR2	DDR3	DDR4
2 memory modules	DS/SS	X	DS/SS	X
	X	DS/SS	X	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

Don't operate Dual Channel Technology (DS:Double Side, SS: Single Side)

	DDR1	DDR2	DDR3	DDR4
1 memory module	DS/SS	X	X	X
	X	DS/SS	X	X
	X	X	DS/SS	X
	X	X	X	DS/SS
2 memory module	DS/SS	DS/SS	X	X
	X	X	DS/SS	DS/SS
3 memory module	DS/SS	DS/SS	DS/SS	X
	DS/SS	DS/SS	X	DS/SS
	DS/SS	X	DS/SS	DS/SS
	X	DS/SS	DS/SS	DS/SS

System Utilities

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required setting or to active certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the mainboard. When the power is turned off, the battery on the mainboard supplies the necessary power to the CMOS SRAM.

When the power is turned on, pushing the <Del> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing “Ctrl+F1”. When setting up BIOS for the first time, it is recommended that you save the current BIOS to a disk in the event that BIOS needs to be reset to its original settings.

Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system. BIOS is a Window s-based utility that doesn’t required users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

Control Keys

Item	Description
↑ → ↓ ←	Move to selection
ENTER	Select Item
ESC	Main Menu: Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu, Exit current page and return to Main Menu.
PG UP	Increase the numeric value or make changes
PG DN	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Item Help
F5	Restore the previous CMOS value from CMOS, only for option Page Setup Menu
F7	Load the Optimized Defaults
F9	System Information
F10	Save all the CMOS changes, only for Main Menu

NOTE: Main Menu: This is the online description of the highlighted setup functions is displayed at the bottom of the screen.

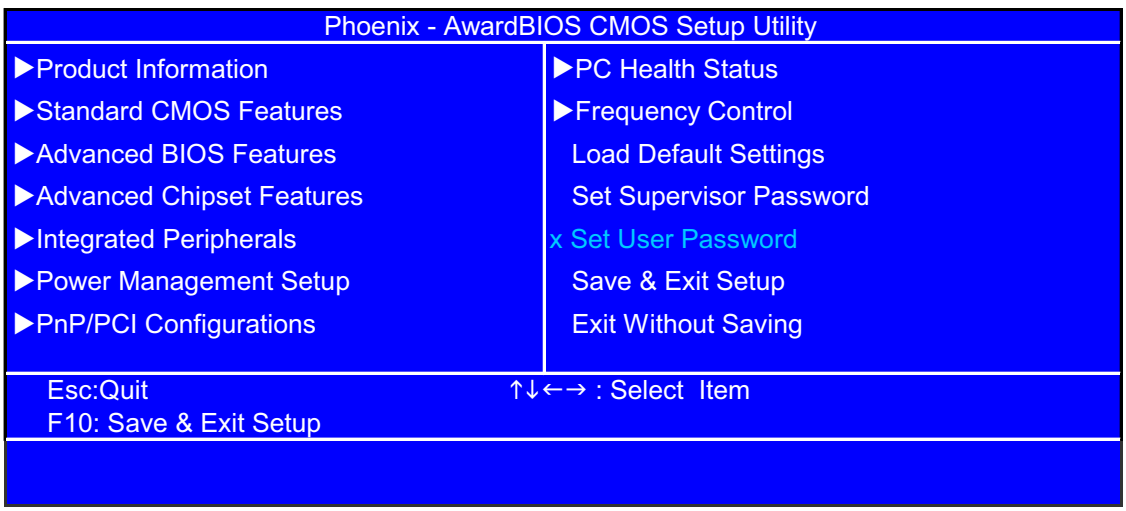
NOTE: Status Page Setup Menu/ Option Page Setup Menu: Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

Entering Setup

Once enter Award BIOS CMOS Setup Utility, the Main Menu (as figure below) will appear on the screen.

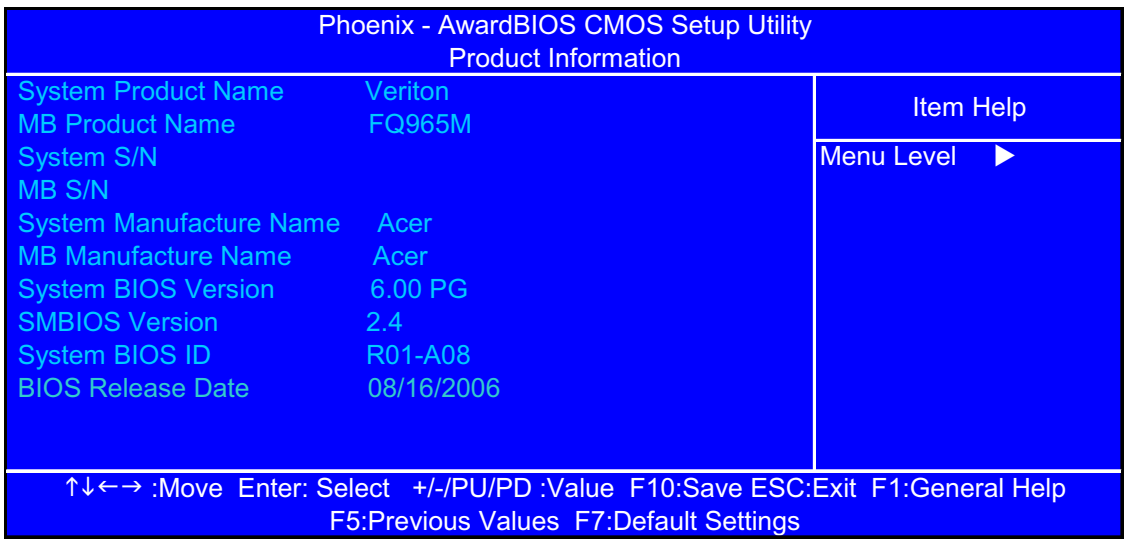
Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

Note: If you can't find the setting you want, please press "Alt+F4" to search the advanced option hidden. As for the hidden options, we have annotations following those with further setting screen menu.



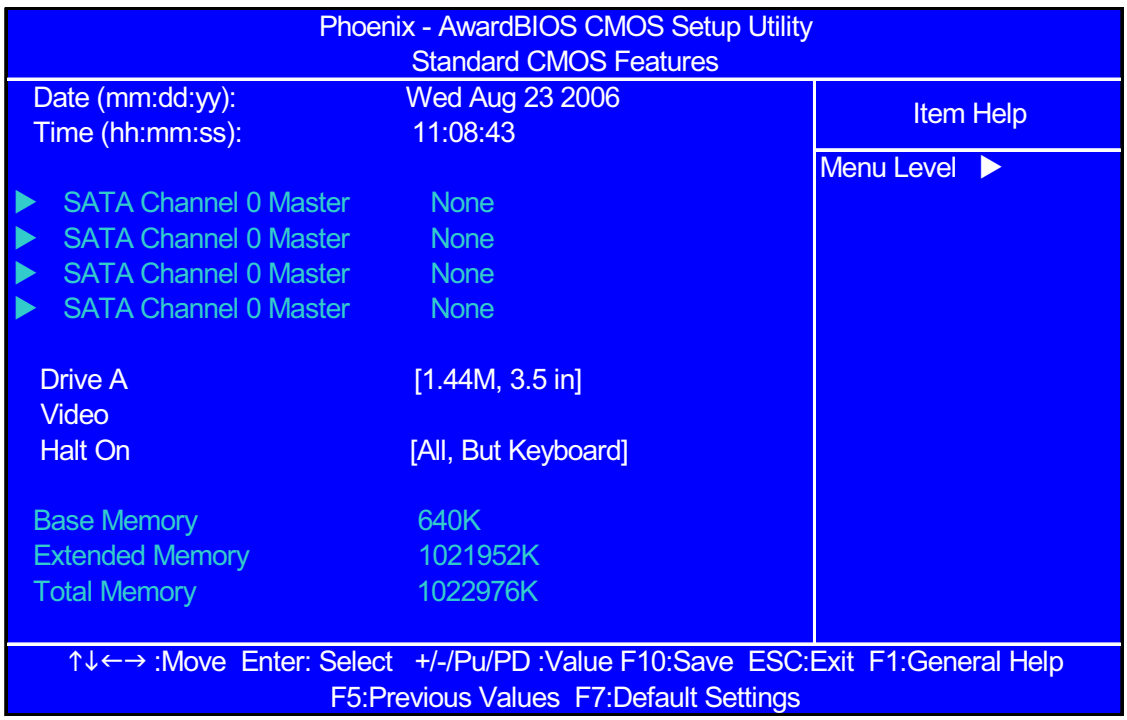
Parameter	Description
Product Information	This page shows the relevant information of the mainboard
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advanced BIOS Features	The values for the chipset can be changed through this menu, and the system performance can be optimized.
Advanced Chipset Features	This setup page allows user to configure the advanced chipset settings, such as memory timing.
Integrated Peripherals	This setup page includes all onboard peripherals
Power Management Setup	This setup page includes all the items of Green function features
PnP/PCI Configuration	This setup page includes all configurations of PCI&PnP ISA resources
PC Health Status	This setup page is the System auto detect Temperature, voltage, fan and speed
Load Default Settings	Default Settings indicates the value of the system parameters which the system would be in best performance configuration
Set Supervisor Password	Change, set or disable password. It allows you to limit access to the system and Setup, or just to Setup
Set User Password	Change, set or disable password. It allows you to limit access to the system
Save & Exit Setup	Save CMOS value settings to CMOS and exit setup
Exit Without Saving	Abandon all CMOS value changes and exit setup

Product Informatoin



Parameter	Description
System Product Name	This item lists the product name
MB Product Name	This item lists the main board product name.
System S/N	This item lists the system serial number
MB S/N	This item lists the main board serial number.
System Manufacture Name	This item lists the system manufacturer name
MB Manufacture Name	This item lists the main board manufacturer name.
System BIOS Version	This item lists the system BIOS version
SMBIOS Version	This item lists the system SMBIOS version
System BIOS ID	This item lists the system BIOS ID
BIOS Release Date	This item lists the BIOS release date

Standard CMOS Features


Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features
Date (mm:dd:yy): Wed Aug 23 2006
Time (hh:mm:ss): 11:08:43
SATA Channel 0 Master None
SATA Channel 0 Master None
SATA Channel 0 Master None
SATA Channel 0 Master None
Drive A [1.44M, 3.5 in]
Video
Halt On [All, But Keyboard]
Base Memory 640K
Extended Memory 1021952K
Total Memory 1022976K
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/Pu/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

The following table describes the parameters found in this menu:

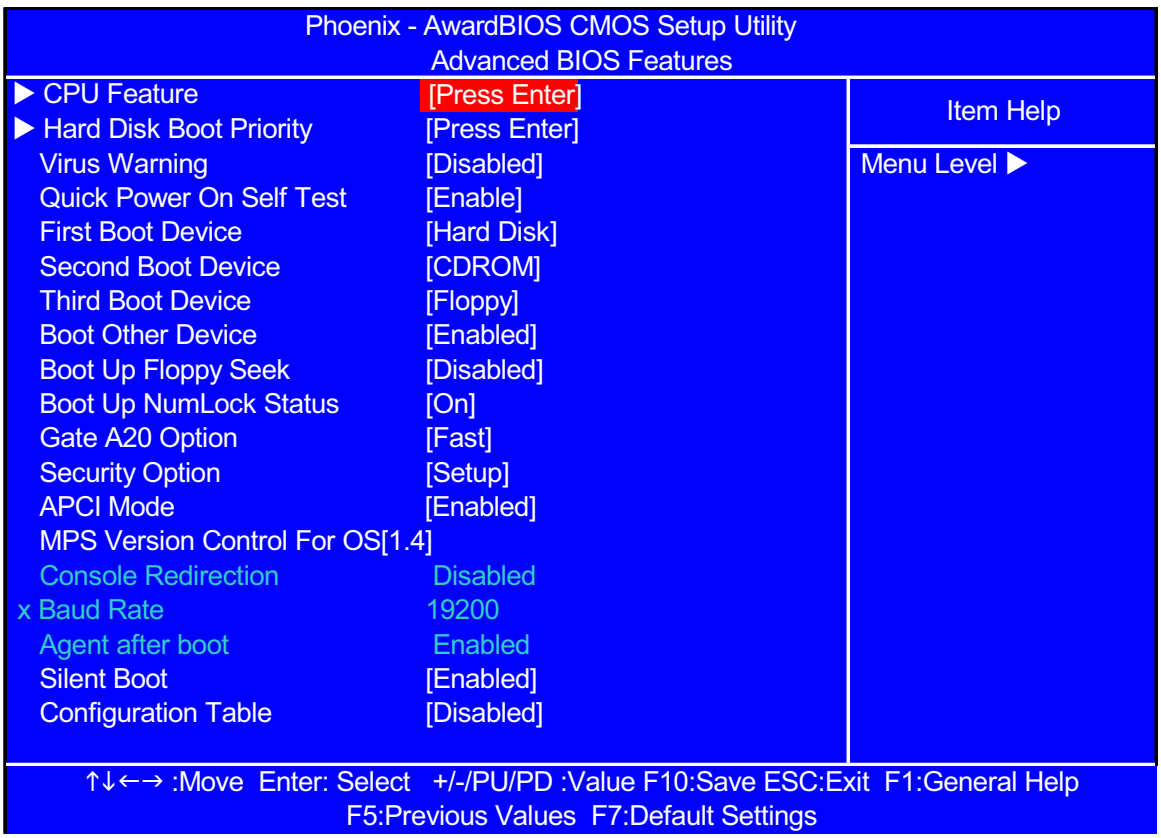
Parameter	Description	Options
Date	Lets you set the date following the weekday-month-day-year format	Week : from Sun. to Sat., determined by BIOS and is display only Month : from Jan. through Dec. Day : from 1 to 31 (or the maximum allowed in the month) Year : from 1999 to 2098
Time	Lets you set the time following the hour-minute-second format	The items format is <hour> <minut><second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00

Parameter	Description	Options
SATA channel 0/1 Master, Slave	Allows you to configure the hard disk drive connected to the master port of SATA channel. To enter the SATA Master or Slave setup, press [Enter].	SATA HDD Auto-Detection Press [Enter] to select this option for automatic device detection. SATA Primary/Secondary Master, Slave IDE Device Setup. You can use one of three methods: Auto : Allows BIOS to automatically detect SATA devices during POST (default) None : Select this if no IDE devices are used and the system will skip the automatic detection step and allow for faster system start up Manual : User can manually input the correct settings Access Mode : Use this to set the access mode for the hard drive. the four options are: CHS/LBA/Large/Auto (default: Auto) * Cylinder : Number of cylinders * Head : Number of heads * Precomp : Write precomp * Landing Zone : Landing Zone Sector : Number of sectors Access Mode allows you to select the access mode. The options are CHS, LBA, Large, and **Auto**.
Drive A	The category identifies the types of floppy disk drive A that has been installed in the computer.	None : No floppy drive installed 360K, 5.25” : 5.25 inch PC type standard drive ; 360Kbyte capacity 1.2M, 5.25” : 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled) 720K, 3.5” : 3.5 inch double-sided drive; 720Kbyte capacity **1.44M, 3.5”** : 3.5 inch double-sided drive; 1.44Mbyte capacity 2.88M, 3.5” : 3.5 inch double-sided drive; 2.88Mbyte capacity
Halt On	This parameter enables you to control the system stops in case of Power On Self Test errors (POST)	No Errors : The system boot will not stop for any error that may be detected and you will be prompted All Errors : Whenever the BIOS detects a non-fatal error the system will be stopped **All, But Keyboard** : The system boot will not stop for a keyboard error; it will stop for all other errors (Default value) All, But Diskette : The system boot will not stop for a disk error; it will stop for all other errors All, But Disk/Key : The system boot will not stop for a keyboard or disk error; it will stop for all other errors.
Base Memory	Typically 640 KB. Also called conventional memory. The DOS operating system and conventional applications use this area.	N/A
Extended Memory	Above the 1-MB boundary. Early IBM personal computers could not use memory above 1 MB, but current PCs and their software can use extended memory.	N/A

Parameter	Description	Options
Total Memory	Base + Upper + Extended = Total Memory.	N/A

Advanced BIOS Features

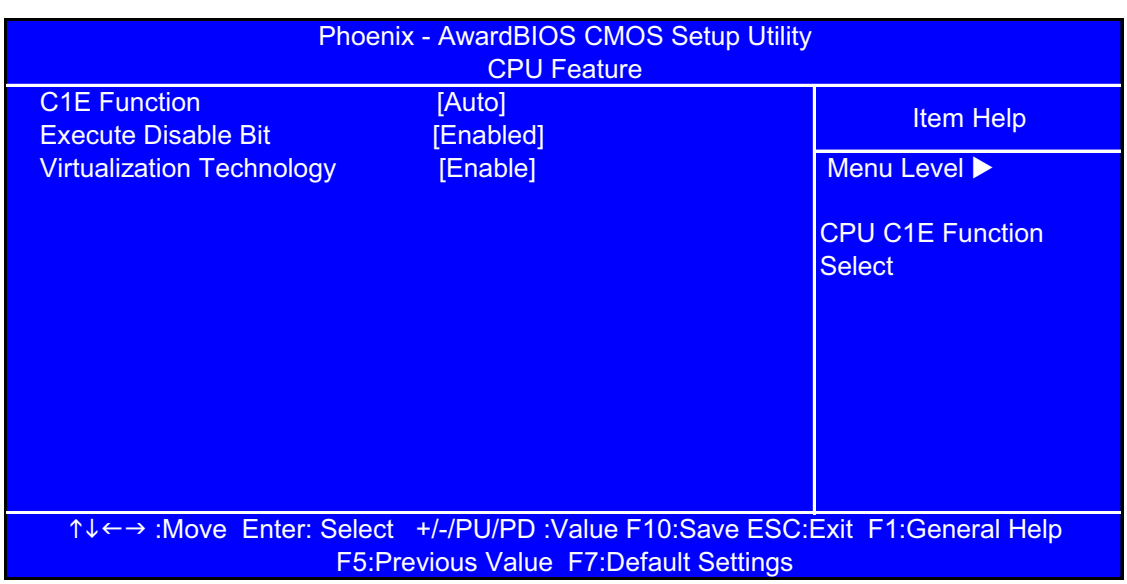
The following screen shows the Advanced BIOS Features:


Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features
▶ CPU Feature [Press Enter]
▶ Hard Disk Boot Priority [Press Enter]
Virus Warning [Disabled]
Quick Power On Self Test [Enable]
First Boot Device [Hard Disk]
Second Boot Device [CDROM]
Third Boot Device [Floppy]
Boot Other Device [Enabled]
Boot Up Floppy Seek [Disabled]
Boot Up NumLock Status [On]
Gate A20 Option [Fast]
Security Option [Setup]
APCI Mode [Enabled]
MPS Version Control For OS[1.4]
Console Redirection Disabled
x Baud Rate 19200
Agent after boot Enabled
Silent Boot [Enabled]
Configuration Table [Disabled]
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
CPU Feature	Press Enter to display CPU feature	N/A
Hard Disk Boot Priority	Press [Enter] to enter the sub menu to select Hard Disk Boot Device Priority.	Use ↑ ↓ to select a device, then press<+> to move it up, or < - > to move it down the list.
Virus Warning	This feature allows you to enable the VIRUS warning function for IDE Hard Disk boot sector protection. If this function is enabled and there is someone attempt to write data into this area, BIOS will show a warning message on screen and the alarm will beep.	Enabled **Disabled**
Quick Power On Self Test	This feature allows the system to skip certain tests while booting. When this function is enabled, it will decrease the time needed to boot the system, which means to quick power on self test function	**Enabled** Disabled
First / Second / Third Boot Device	The item allows you to set the sequence of boot device where BIOS attempts to load the disk operating system.	Floppy, LS120, **Hard Disk**, CD-ROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled
Boot other Devices	This item allows you to enable or disable to boot from other device	**Enabled** Disabled

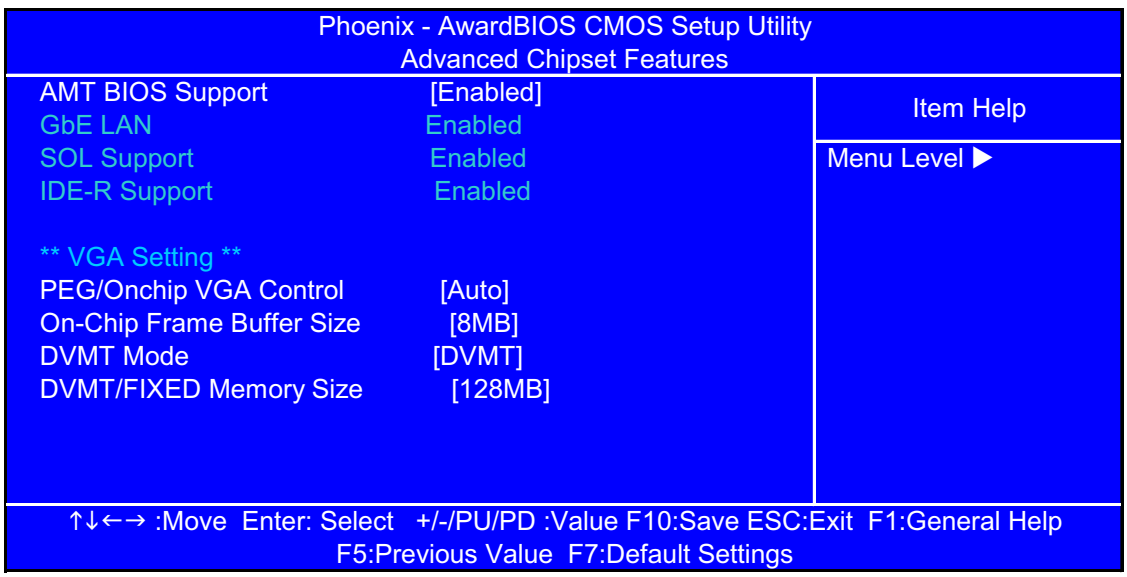
Parameter	Description	Options
Boot Up Floppy Seek	When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.44 MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to Disabled to save time.	Enabled **Disabled**
Boot Up NumLock Status	This item allows you to enable or disable to set keyboard is number keys or arrow keys	**Enabled** Disabled
Gate A20 Option	Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.	**Fast** Normal
Security Option	If you have set a password, select whether the password is required every time the System boots, or only when you enter Setup.	**Setup** System boots
APCI Mode	This option is used to set up enable or disable the APCI funtion	Enabled **Disabled**
MPS Version Control For OS	The BIOS supports versions 1.1 and 1.4 of the Intel multiprocessor specification. Select the version supported by the operating system running on this computer.	1.4
Silent Boot	This features allows you to enable or disable if the screen logo to display or no during POST	**Enabled** Disabled
Configuration Table	This feature allows you to enable or disable if showing summary screen or not	Enabled **Disabled**

CPU Feature


Phoenix - AwardBIOS CMOS Setup Utility
CPU Feature
C1E Function [Auto]
Execute Disable Bit [Enabled]
Virtualization Technology [Enable]
Item Help
Menu Level ▶
CPU C1E Function Select
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Value F7:Default Settings

Parameter	Description	Options
C1E Function	CPU new added feature. System may hang when SATA port 4 is in used. C1E function can fix this problem.	Auto Disabled Enable
Execute Disable Bit	Can improve protection against malicious "buffer overflow" attacks when properly enabled with Windows XP SP2.	Enabled Disabled
Virtualization Technology	Virtualization enhanced by Intel Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple operating systems. With processor and I/O enhancements to Intel's various platforms, Intel Virtualization Technology can improve the performance and robustness of today's software-only virtual machine solutions.	**Enable** Disabled

Advanced Chipset Features

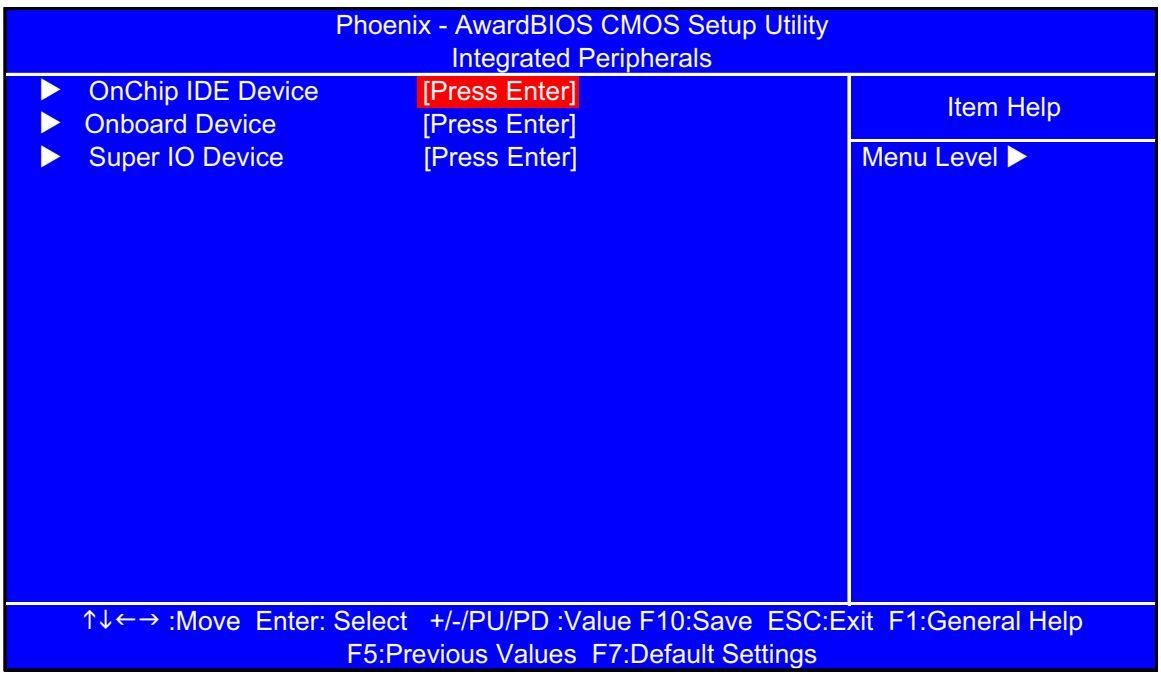

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features
AMT BIOS Support [Enabled]
GbE LAN Enabled
SOL Support Enabled
IDE-R Support Enabled
** VGA Setting **
PEG/Onchip VGA Control [Auto]
On-Chip Frame Buffer Size [8MB]
DVMT Mode [DVMT]
DVMT/FIXED Memory Size [128MB]
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Value F7:Default Settings

Parameter	Description	Options
AMT BIOS Support	Enables or disables Intel (R) AMT (Active Management Technology) BIOS supporting function. Please visit Intel (R) website for more details. http://www.intel.com/technology/manage/iamt/index.htm	**Disabled** Enabled
GbE LAN	Displays Gigabit Ethernet support is enabled or disabled.	
SOL Support	Displays Serial-over-LAN function is enabled or disabled. Serial-over-LAN provides a mechanism that enables the serial controller of a managed system to be redirected over an IPMI (Intelligent Platform Management Interface) session over IP. This enables remote console applications to provide access to text-based interfaces for BIOS, utilities, operating systems, and applications while simultaneously providing access to IPMI platform management functions. SOL is implemented as a payload type under the new payload capability in RMCP plus.	
IDE-R Support	Displays IDE RAID function is enabled or disabled. If you like to know more details about IDE-R, please visit http://www.answers.com/topic/ide-raid	
PEG/Onchip VGA Control	This BIOS feature is found in motherboards that have a built-in graphics processor as well as a PCI Express port. It allows you to select whether to use the onboard graphics processor or the PCI Express card. When set to Onchip VGA, the motherboard boots up using the onboard graphics processor, even when a PCI Express graphics card is installed. When set to PEG Port, the motherboard boots up using the PCI Express graphics card, if one is installed. Otherwise, it defaults to the onboard graphics processor. When set to Auto, the BIOS checks to see if a PCI Express graphics card is installed. If it detects that a PCI Express graphics card is present, the motherboard boots up using that card. Otherwise, it defaults to the onboard graphics processor.	PEG Port Onchip VGA Auto

Parameter	Description	Options
On-Chip Frame Buffer Size	This BIOS feature controls the amount of system memory that is allocated to the integrated graphics processor when the system boots up. Please visit http://www.rojakpot.com/showFreeBOG.aspx?lang=0&bogno=325 for more detailed settings.	1MB, 4MB, 8MB, 16MB, 32MB, 64MB, 128MB (for UMA) 1MB, 8MB (for DVMT)
DVMT Mode	The BIOS feature that controls all this is the DVMT Mode BIOS feature. It allows you to select the DVMT operating mode. When set to Fixed Mode , the graphics driver will reserve a fixed portion of the system memory as graphics memory. This ensures that the graphics processor has a guaranteed amount of graphics memory but the downside is once allocated, this memory cannot be used by the operating system even when it is not in use. When set to DVMT Mode, the graphics chip will dynamically allocate system memory as graphics memory, according to system and graphics requirements. The system memory is allocated as graphics memory when graphics-intensive applications are running but when the need for graphics memory drops, the allocated graphics memory can be released to the operating system for other uses. When set to Combo Mode , the graphics driver will allocate a fixed amount of memory as dedicated graphics memory, as well as allow more system memory to be dynamically allocated between the graphics processor and the operating system. It is recommended that you set this BIOS feature to DVMT Mode for maximum performance. Setting it to DVMT Mode ensures that system memory is dynamically allocated for optimal balance between graphics and system performance.	Fixed Mode DVMT Mode Combo Mode
DVMT/FIXED Memory Size	It allows you to set the maximum amount of system memory that can be allocated as graphics memory, but only for the Fixed or DVMT operating modes. When the DVMT + Fixed mode is selected, this BIOS feature is grayed out because when in that operating mode, the graphics driver automatically allocates a total of 128MB of graphics memory. When set to 64MB, up to 64MB of system memory can be used as graphics memory. When set to 128MB, up to 128MB of system memory can be used as graphics memory.	64MB 128MB

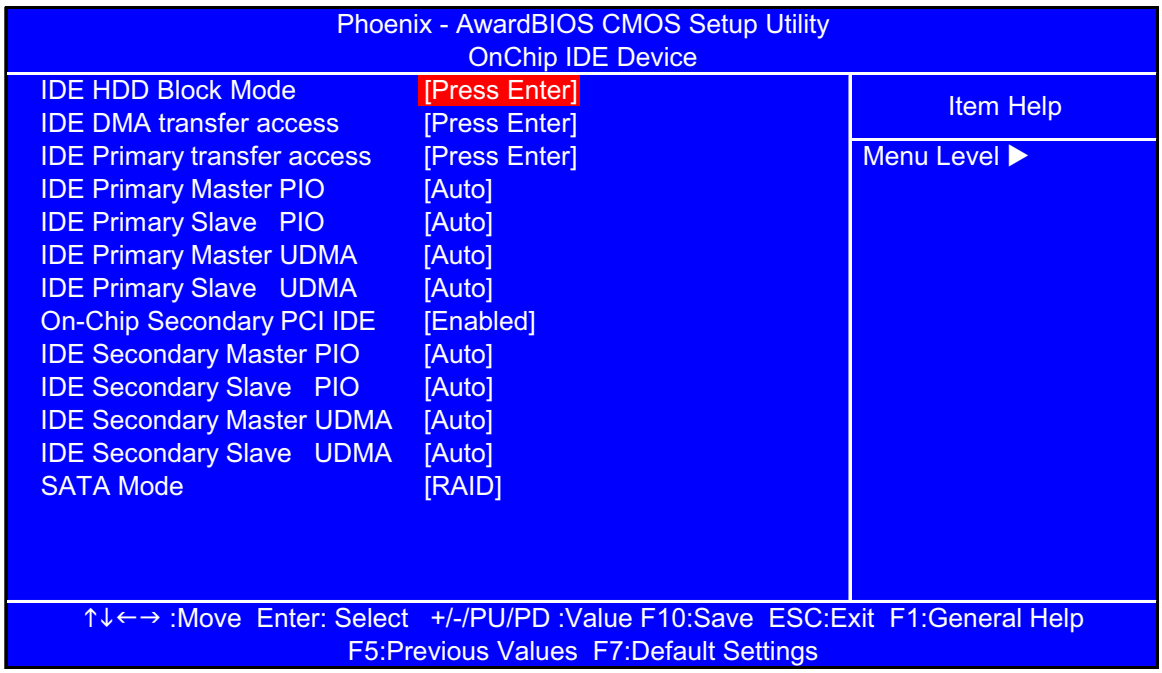
Integrated Peripherals

All onboard peripherals can be set up through this menu.



Parameter	Description	Options
OnChip IDE Device	The integrated peripheral device contains a IDE interface with support for two IDE channels. Press Enter to see the device options. Please see next page for more details.	
Onboard Device	Press Enter to see on-board device options. Please see page 35 for more details.	
Super IO Device	Press Enter to see super IO device options. Please see page 37 for more details.	

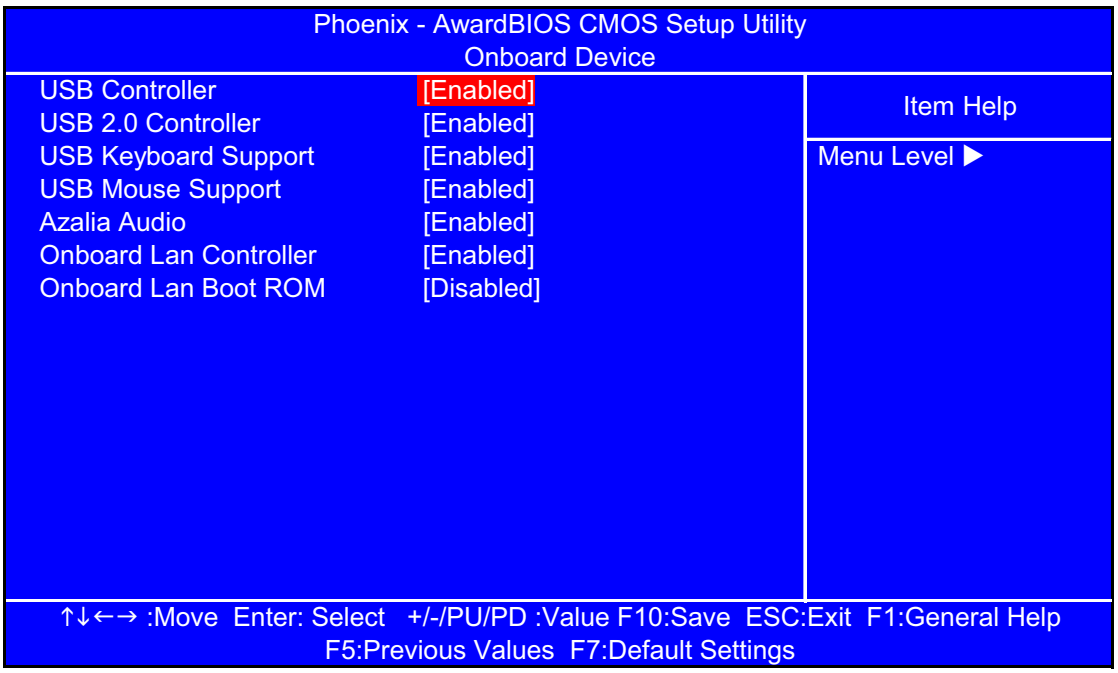
OnChip IDE Device


Phoenix - AwardBIOS CMOS Setup Utility
OnChip IDE Device
IDE HDD Block Mode [Press Enter]
IDE DMA transfer access [Press Enter]
IDE Primary transfer access [Press Enter]
IDE Primary Master PIO [Auto]
IDE Primary Slave PIO [Auto]
IDE Primary Master UDMA [Auto]
IDE Primary Slave UDMA [Auto]
On-Chip Secondary PCI IDE [Enabled]
IDE Secondary Master PIO [Auto]
IDE Secondary Slave PIO [Auto]
IDE Secondary Master UDMA [Auto]
IDE Secondary Slave UDMA [Auto]
SATA Mode [RAID]
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
IDE HDD Block Mode	Selecting Enabled speeds up processing of drive reads and writes, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled.	
IDE DMA transfer access	This BIOS feature allows you to enable or disable DMA (Direct Memory Access) support for all IDE devices. If you disable this BIOS feature, the BIOS will disable DMA transfers for all IDE drives. They will revert to PIO mode transfers. If you enable this BIOS feature, the BIOS will enable DMA transfers for all IDE drives. The proper DMA mode will be detected at boot-up. If the drive does not support DMA transfers, then it will use PIO mode instead.	
IDE Primary transfer access	This BIOS feature allows you to enable or disable primary support for all IDE devices.	
IDE Primary/Secondary Master/Slave PIO	The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.	Auto Enabled Disabled

Parameter	Description	Options
IDE Primary/Secondary Master/Slave UDMA	UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.	Auto Enabled Disabled
On-Chip Secondary PCI IDE	The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.	Auto Enabled Disabled
SATA Mode	This BIOS feature controls the SATA controller's operating mode. There are three available modes - IDE, SATA or AHCI and RAID. When set to SATA or AHCI, the SATA controller enables its AHCI features when the computer boots up. When set to RAID, the SATA controller enables its RAID and AHCI functions when the computer boots up. When set to IDE, the SATA controller disables its RAID and AHCI functions when the computer boots up. If you intend to create or use a RAID array, you should set this BIOS feature to RAID. The BIOS will load the RAID setup utility which you can access at boot time. If you do not wish to create or use a RAID array but would like to make use of the SATA controller's AHCI features, you should set this BIOS feature to SATA or AHCI. This skips the loading of the SATA controller's RAID functions at boot time, which speeds up the boot process.	RAID, SATA or AHCI, IDE

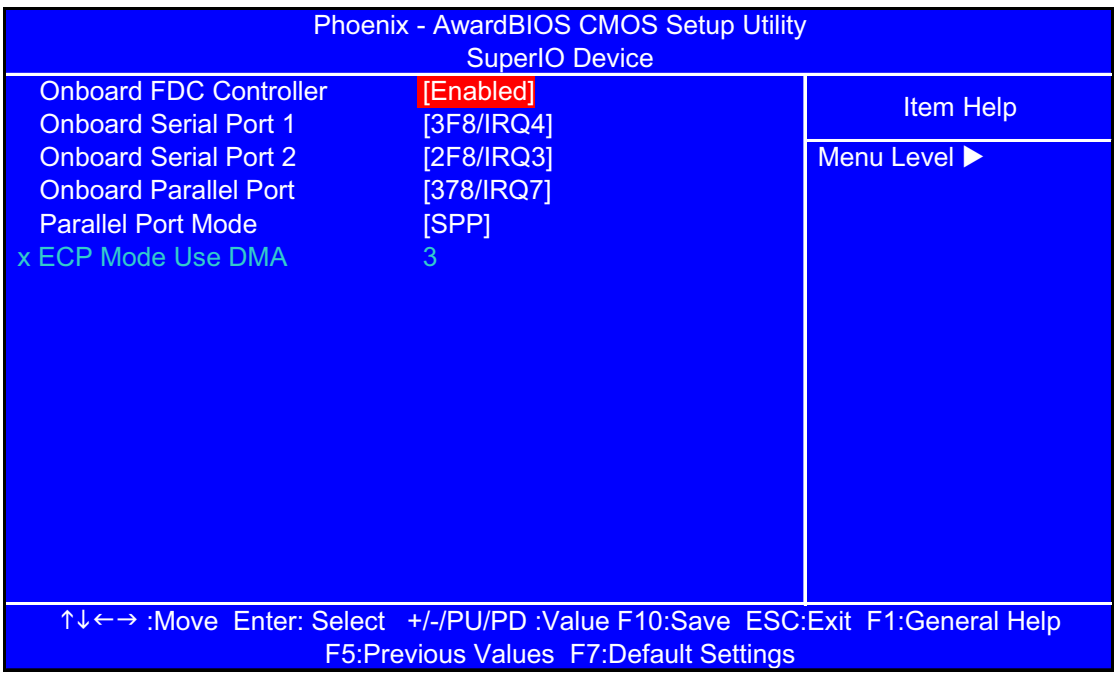
Onboard Device


Phoenix - AwardBIOS CMOS Setup Utility
Onboard Device
USB Controller [Enabled]
USB 2.0 Controller [Enabled]
USB Keyboard Support [Enabled]
USB Mouse Support [Enabled]
Azalia Audio [Enabled]
Onboard Lan Controller [Enabled]
Onboard Lan Boot ROM [Disabled]
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
USB Controller	This BIOS feature enables or disables the motherboard's onboard USB controller. It is recommend that you enable this feature so that you can use the onboard USB controller to communicate with your USB devices. If you disable this feature, the USB controller will be disabled and you will not be able to use it to communicate with any USB device. This frees up an IRQ for other devices to use. This is useful when you have many devices that cannot share IRQs.	Enabled Disabled
USB 2.0 Controller	This BIOS feature enables or disables the motherboard's onboard USB 2.0 controller.	Enabled Disabled
USB Keyboard Support	This BIOS feature determines if support for the USB keyboard should be provided by the operating system or the BIOS. Therefore, it will only affect those who are using USB keyboards. If your operating system offers native support for USB keyboards, you should select the OS option. This will provide much greater functionality. However, if you are using DOS or operating systems that do not offer support for USB keyboards, then using the OS option will essentially disable the keyboard as these operating systems cannot 'detect' or work with USB keyboards.	Enabled Disabled

Parameter	Description	Options
USB Mouse Support	This BIOS feature determines if support for the USB mouse should be provided by the operating system or the BIOS. Therefore, it will only affect those who are using USB mice. If your operating system offers native support for USB mice, you should select the OS option. This will provide much greater functionality. However, if you are using DOS or operating systems that do not offer support for USB mice, then using the OS option will essentially disable the mouse as these operating systems cannot 'detect' or work with USB mice.	Enabled Disabled
Azalia Audio	Select Enabled to use the Azalia audio capabilities of your system.	**Auto** : The system will automatically detect the HD audio funtion. Enabled: Enable HD audio functionr Disabled : Disable HD audio function
Onboard Lan Controller	This BIOS feature enables or disables the motherboard's onboard LAN controller. When enabled, the BIOS enables the onboard LAN controller. When disabled, the BIOS disables the onboard LAN controller.	Enabled Disabled
Onboard Lan Boot ROM	This BIOS feature enables or disables the motherboard's onboard LAN boot ROM.	Enabled Disabled

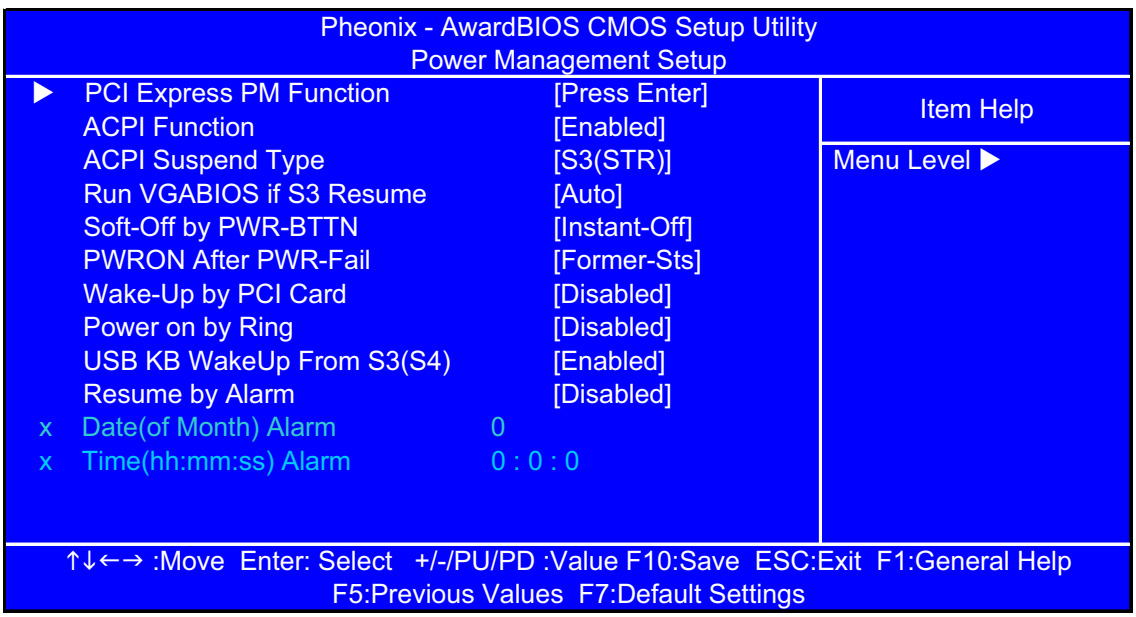
Super IO Device


Phoenix - AwardBIOS CMOS Setup Utility
SuperIO Device
Onboard FDC Controller [Enabled]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Serial Port 2 [2F8/IRQ3]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
x ECP Mode Use DMA 3
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
Onboard FDC Controller	Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.	Enabled Disabled
Onboard Serial Port 1/2	Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports.	Please refer to the BIOS on your system for actual options.
Onboard Parallel Port	Select a logical LPT port address and corresponding interrupt for the physical parallel port.	Please refer to the BIOS on your system for actual options.
ECP Mode Use DMA	Select a DMA channel for the port.	Please refer to the BIOS on your system for actual options.

Power Management Setup

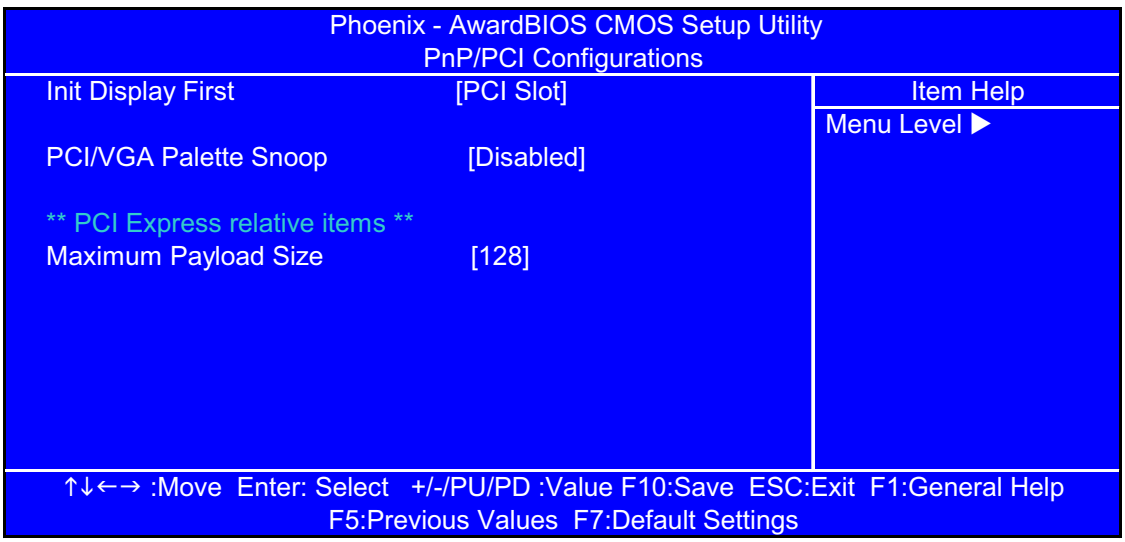
The Power Management menu lets you configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.


Pheonix - AwardBIOS CMOS Setup Utility
Power Management Setup
▶ PCI Express PM Function [Press Enter]
ACPI Function [Enabled]
ACPI Suspend Type [S3(STR)]
Run VGABIOS if S3 Resume [Auto]
Soft-Off by PWR-BTTN [Instant-Off]
PWRON After PWR-Fail [Former-Sts]
Wake-Up by PCI Card [Disabled]
Power on by Ring [Disabled]
USB KB WakeUp From S3(S4) [Enabled]
Resume by Alarm [Disabled]
x Date(of Month) Alarm 0
x Time(hh:mm:ss) Alarm 0 : 0 : 0
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
PCI Express PM Function	This item is for PCI Express power management function.	N/A
ACPI Function	This item allows you to enable or disable the ACPI function	**Enabled** Disabled
ACPI Suspend Type	This item specifies the power saving modes for ACPI function. S1(POS): The S1 sleep mode is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system context. S3 (STR): The S3 sleep mode is s power-down state in which power is supplied only to essential components such as main memory and wake-capable devices and all system context is saved to main memory. The information stored in memory will be used to restore the PC to the previous state when an wake-up event occurs.	**S1 (POS)** : Set ACPI suspend type to S1/POS(Power On Suspend). S3 (STR) : Set ACPI suspend type to S3/STR
Run VGABIOS if S3 Resume	This item determines whether or not to enable the system to run VGA BIOS when resuming from S3 (S4).	Auto, Yes, No
Soft-Off by PWR-BTTN	This item specifies how long you must press and hold down the power button before the system is shut down. Instant-off: Turns off the system instantly. Delay 4 Sec.: Turns off the system after a 4-second delay.	**Instant-off** Delay 4 Sec.
PWRON After PWR-Fail	This item allows you to select if you want to power on the system after power failure.	Off, On and Former-Sts
Wake-Up by PCI Card	This items determines whether or not to wake up the system by PCI card.	Enabled, Disabled
Power on by Ring	This item allows you to power on up the system by LAN signals.	Enabled, **Disabled**

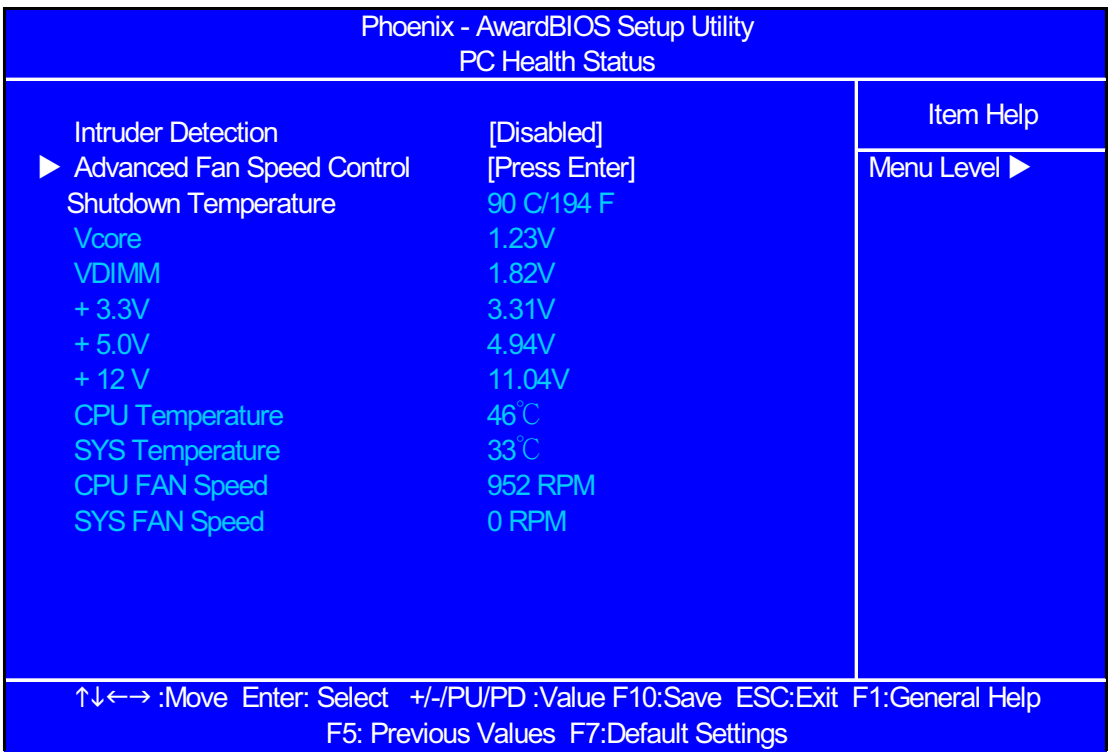
Parameter	Description	Options
USB KB WakeUp From S3(S4)	This item allows you to wake up the keyboard from S3 (S4) stage.	**Enabled**, Disabled
Resume by Alarm	You can set “Resume by Alarm” item to enabled and key in Data/Time to power on system	Disabled : Disable this function Enabled : Enable alarm function to Power On system If RTC Alarm Lead To Power On is Enabled. Date (of Month) Alarm : Everyday, 1~31 Time (hh:mm:ss) Alarm: (0.~23):(0~59):(0~59)

PnP/PCI Configuration


Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations
Init Display First [PCI Slot]
PCI/VGA Palette Snoop [Disabled]
** PCI Express relative items **
Maximum Payload Size [128]
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F7:Default Settings

Parameter	Description	Options
Init Display First	This item is used to select whether to initialize the VGA or PCI first when the system boots.	PCI Slot, VGA, PCIEx
PCI/VGA Palette Snoop	This BIOS feature determines if your graphics card should allow VGA palette snooping by a fixed function display card. It is only useful if you use a fixed-function display card that requires a VGA-compatible graphics card to be present (i.e. MPEG decoder card). This option is rarely needed. It should be set to “Disabled” unless a video device specifically requires the setting enabled upon installation.	**Disabled**, Enabled
Maximum Payload Size	This item allows you to set the maximum TLP (Transaction Layer Packets) value for PCI Express devices.	128, 256., 512, 1024, 2048, 4096
Reset Configuration Data	In case a conflict occurs after you assign the IRQs or after you configure your system, you can enable this function to allow your system to automatically reset your configuration and reassign the IRQs, DMAs and I/O address.	**Disabled**, Enabled
Resources Controlled By	if this option is set to Auto, the BIOS automatically selects all the devices Plug & Play compatible specifying their Interrupt and DMA. If you selected the manual setting, you can specify the device for each interrupt it is assigned to (ISA o PCI); this is the same for DMAs.	**Auto (ESCD)**, Manual
PCI/VGA Palette Snoop	Enable this option to correct screen color shifts, when there is a combination of VGA cards, accelerator cards, or MPEG cards present.	**Disabled**, Enabled

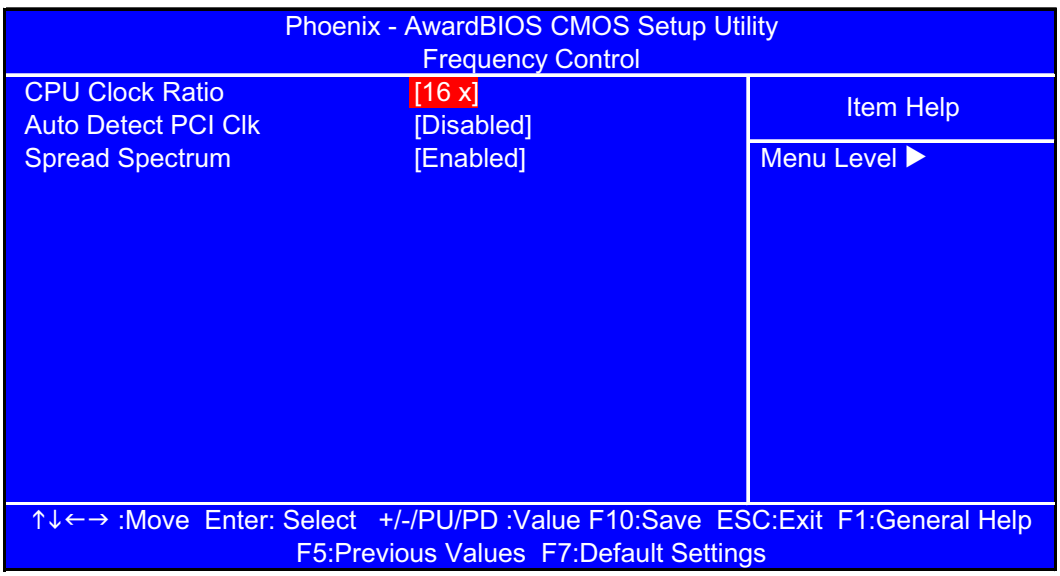
PC Health Status


Phoenix - AwardBIOS Setup Utility
PC Health Status
Intruder Detection [Disabled]
▶ Advanced Fan Speed Control [Press Enter]
Shutdown Temperature 90 C/194 F
Vcore 1.23V
VDIMM 1.82V
+ 3.3V 3.31V
+ 5.0V 4.94V
+ 12 V 11.04V
CPU Temperature 46°C
SYS Temperature 33°C
CPU FAN Speed 952 RPM
SYS FAN Speed 0 RPM
Item Help
Menu Level ▶
↑↓←→ :Move Enter: Select +/-/PU/PD :Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F7:Default Settings

The following table describes the parameters found in this menu:

Parameter	Description	
Intruder Detection	Warning beep alerts as chassis opened.	Enabled, Disabled
Advanced Fan Speed Control	This item allows you to select advanced fan speed control options. Press Enter to see details.	
Shutdown Temperature	This feature allow to set the Shutdown temperature.	90 ° C/194 ° F Disabled
Current Voltage (V) Vcore /DDR18V/ +1.5V/+3.3V/+5V/+12V	Detect system's voltage status automatically	
CPU Temperature	Detect CPU Temperature automatically	
CPU / SYSTEM FAN Speed (RPM)	Detect CPU/SYSTEM Fan Speed status automatically	

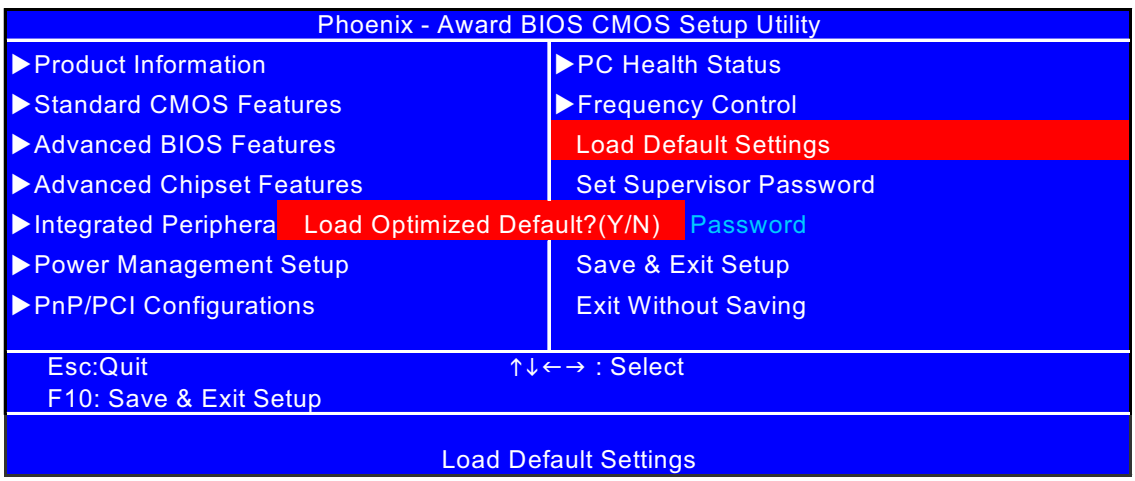
Frequency Control



Parameter	Description	
CPU Clock Ratio	This item allows to adjust CPU clock ratio. However, if your CPU is locked, you'll see the words here turn to gray which means you can do nothing about it. Another item you could often see in Frequency Control section would be "Host CPU/DIMM/PCI Clock". You can adjust external clock via this item.	16x
Auto Detect PCI Clk	To reduce the occurrence of electromagnetic interference (EMI), the BIOS detects the presence or absence of components in DIMM and PCI slots and turns off system clock generator pulses to empty slots.	Enabled Disabled
Spread Spectrum	This feature allows to enable/disable the Spread Spectrum modulate.	Enabled Disabled

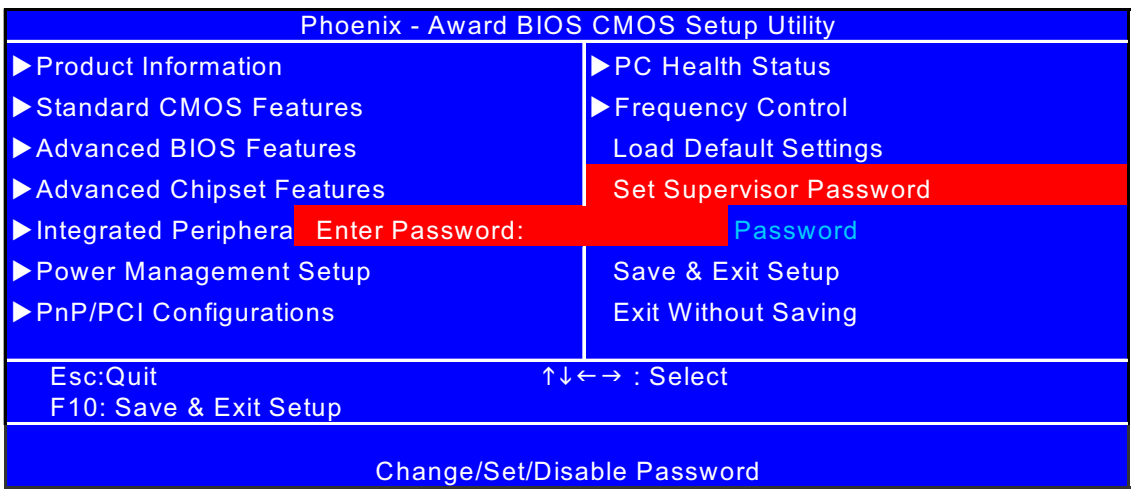
Load Default Settings

Selecting the field loads the factory defaults for BIOS and Chipset Features which the system automatically. detects.



Set Supervisor/User Password

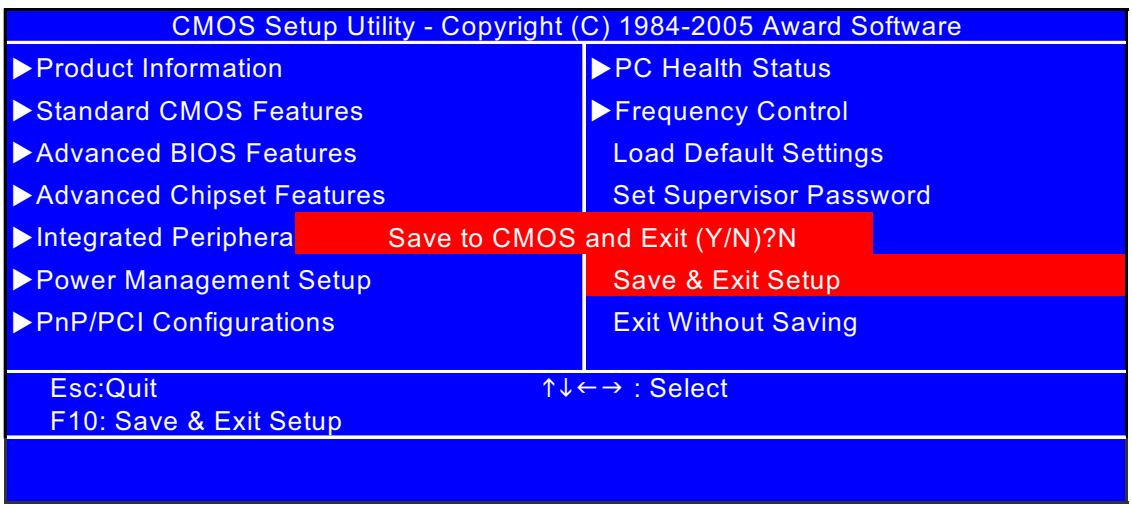
When this function is selected, the following message appears at the center of the screen to assist you in creating a password.



The access rights and permission associated with the Supervisor password are higher than those os a regular User password. The Supervisor password can be used to start the system or modify the CMOS settings. The User password can also start the system. While the User password

Save & Exit Setup

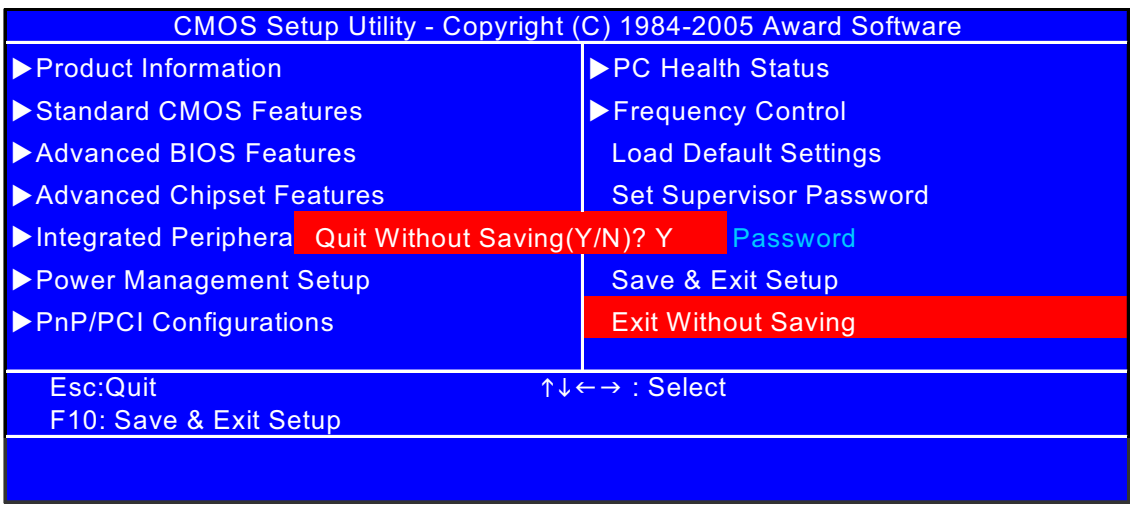
Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility.



When the Save and Exit dialog box appears, press <Y> to save and exit, or press <N> to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility.



When the Exit Without Saving dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

NOTE: If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.

Machine Disassembly and Replacement

This chapter will guide you how to disassemble and Reassemble the Veriton 7900Pro/6900Pro/5900Pro.

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge.
- Wire cutter.
- Phillips screwdriver (may require different size).

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatches when putting back the components.

General Information

Before You Begin

Before proceeding with the disassenbly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.

Veriton 7900Pro Disassembly Procedure

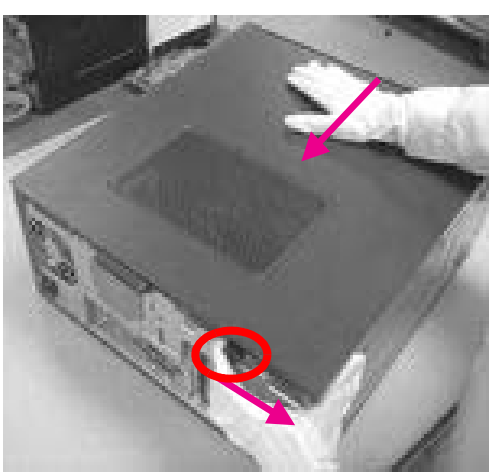
This section tells you how to disassemble the system when you need to perform system service. Please also refer to the disassembly video, if available.

CAUTION: Before you proceed, make sure you have turned off the system and all peripherals connected to it.

Opening the System

1. Place the system on a flat surface as shown.

2. Place the system as shown. Slide the chassis lock (highlighted in red circle) then slide the side door outwards.



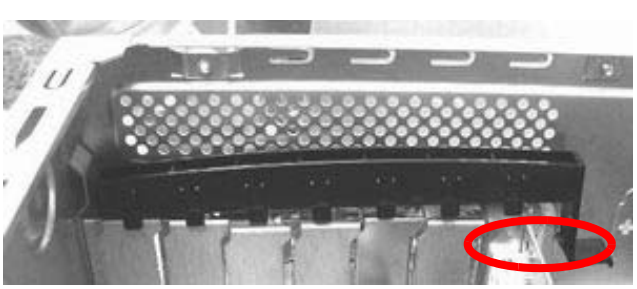
Removing the Front Panel and Top cover

1. Lift the front panel as shown and release the chassis locks.

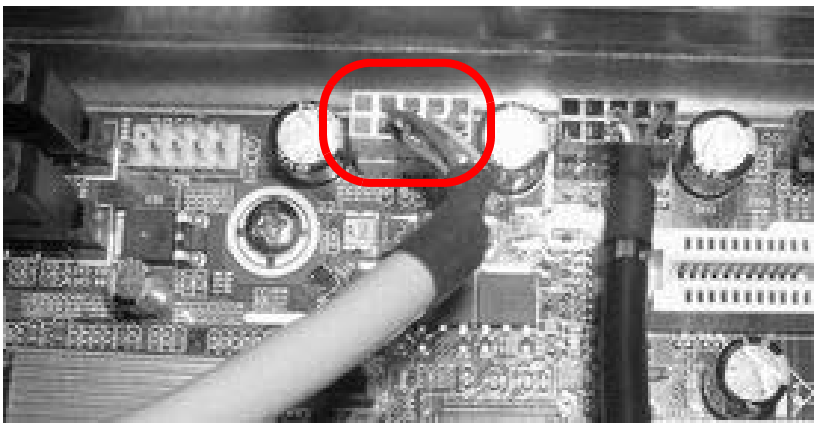
2. Detach the front panel and then the top cover from the system.

Removing the VGA Card and the Cables

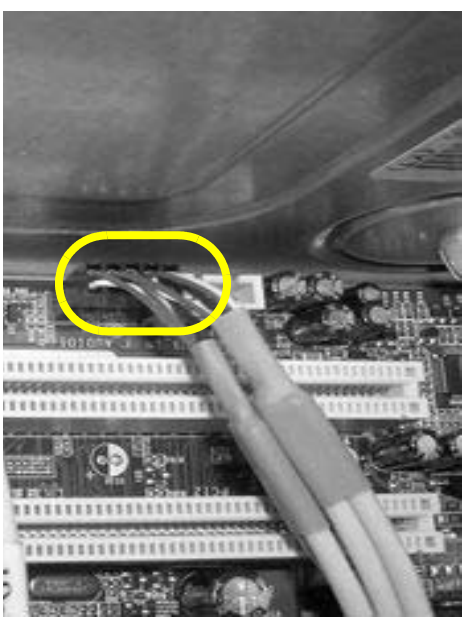
1. Release the PCI lock as red circle highlighted then remove the VGA card.



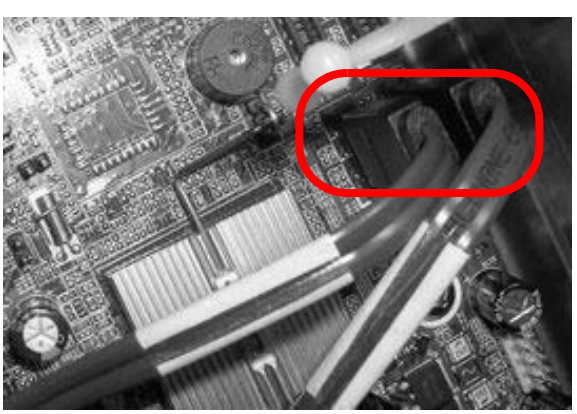
2. Disconnect USB 1&2 cable from the main board.



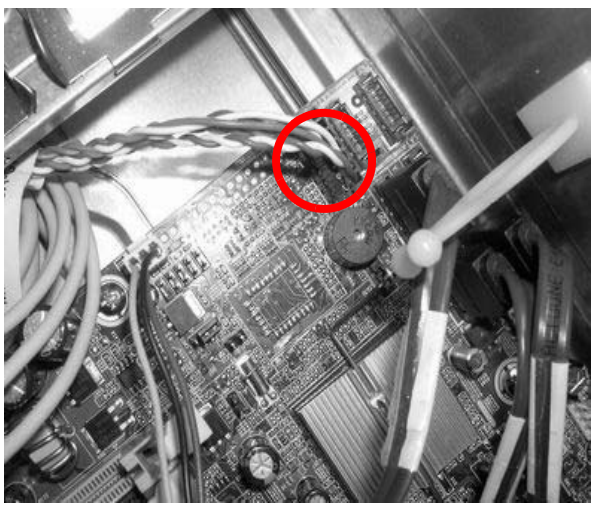
3. Then disconnect audio cable from the main board.



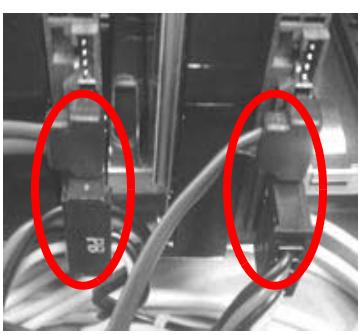
4. Disconnect the HDD SATA cable 1 and 2 from the main board.

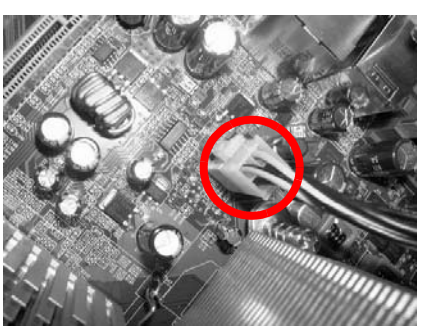


5. Disconnectt he power switch and LED cable as shown.



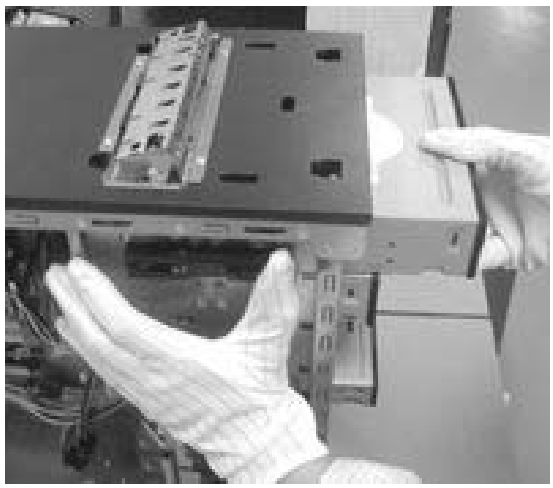
6. Disconnect the HDD SATA cables and the power cable from the main board.



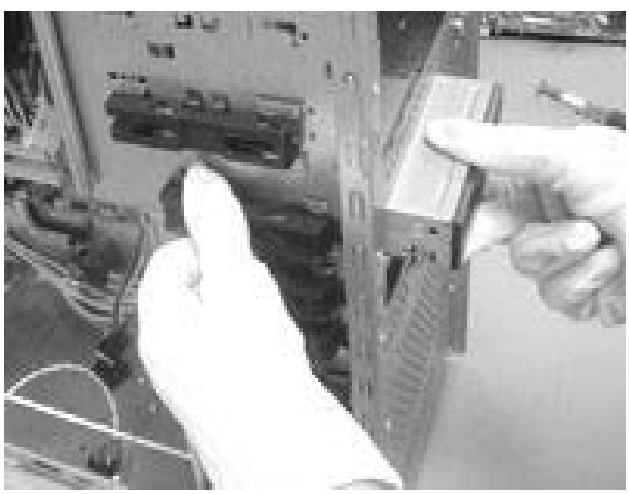


Removing the Optical Drive, Floppy Disk Drive and HDD

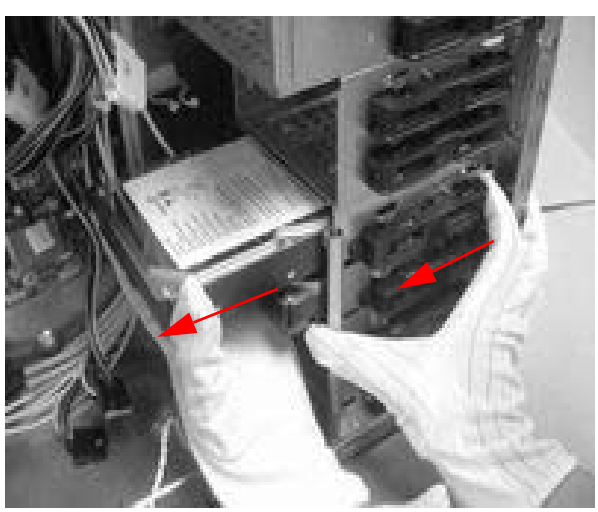
1. Slide the CD-ROM lock and pull out the CD-ROM from the chassis.



2. Slide the FDD lock then pull the FDD out of the chassis.



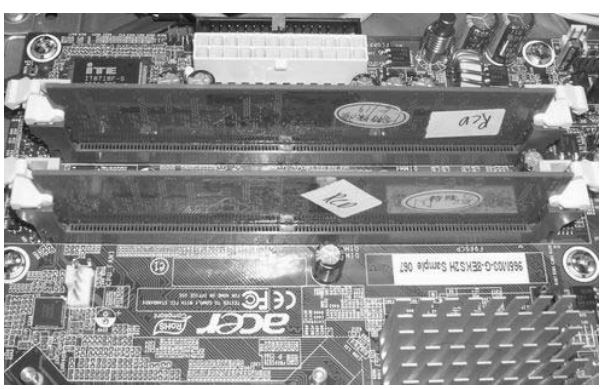
3. Slide the HDD lock and pull out the HDD from the system chassis.



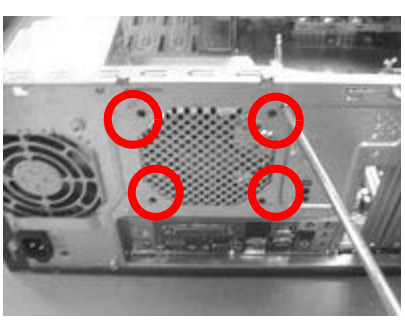
Removing the Heatsink Module, Memory, and System Fan

1. Remove the four screws holding the heatsink then remove it.

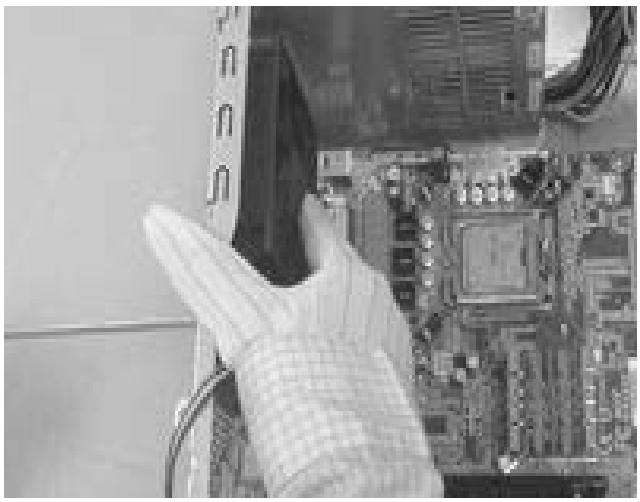
2. Pop out the memory modules and remove them from the memory sockets.



3. Remove the four screws fastening the system fan on the rear side.

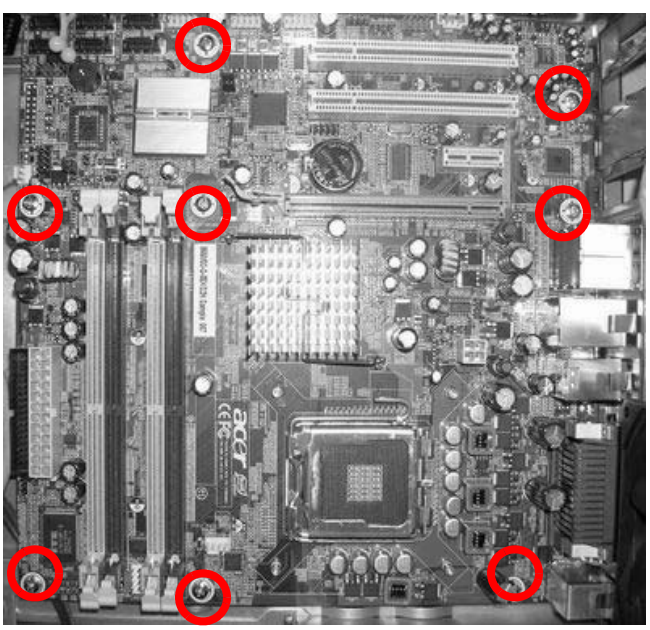


4. Then remove the system.

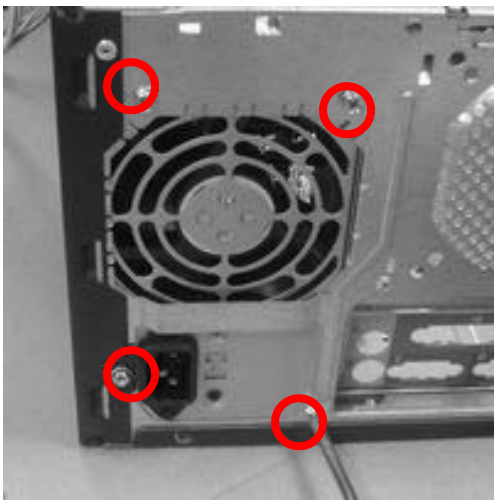


Removing the Main Board and the Power Supply

1. Remove the eight screws holding the main board then remove the main board.



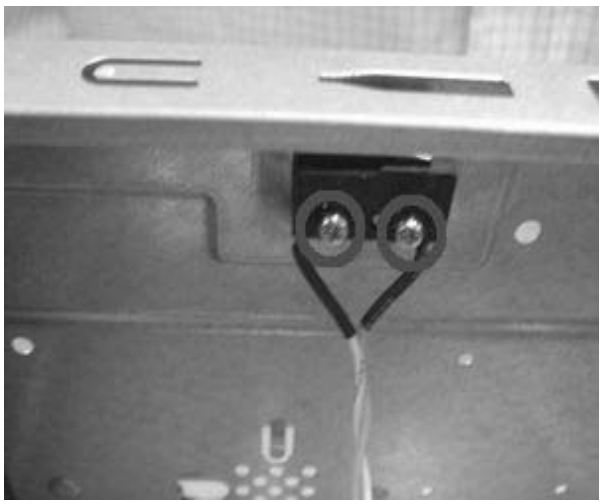
2. Remove the four screws fastening the power supply as shown.



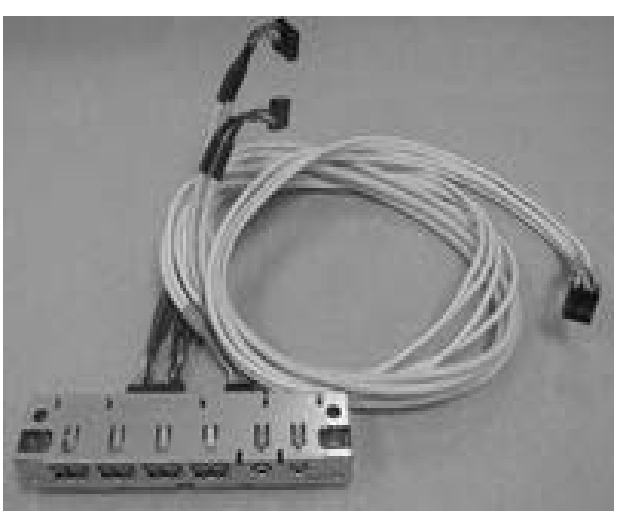
3. Remove the power supply carefully.

Removing the Intrusion Switch and the USB Module

1. Remove the two screws holding the intrusion switch then remove it.



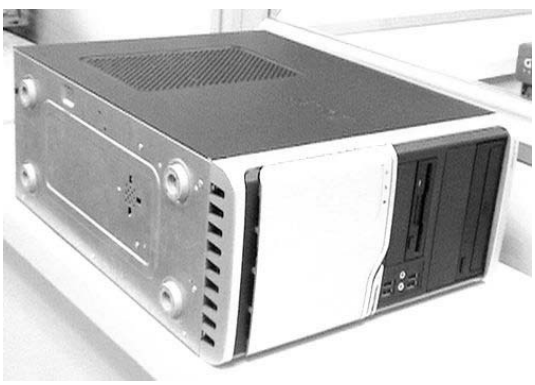
2. Detach the USB board (with its upper bracket) then pull out the USB/audio cables.



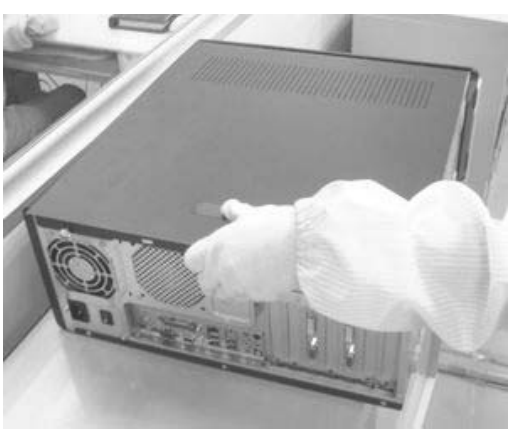
Veriton 6900Pro Disassembly Procedure

Opening the System

1. Place the system on a flat surface.

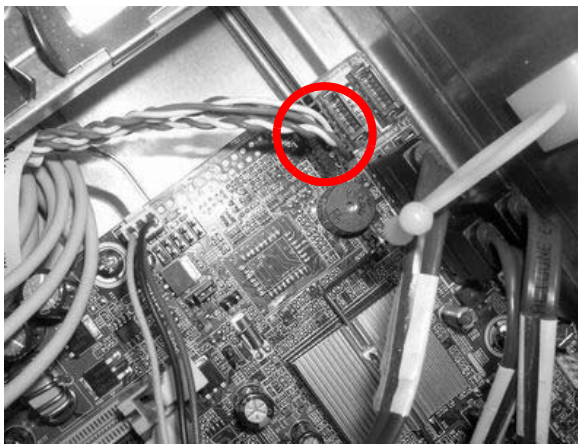


2. Release the chassis lock then slide the left side door.

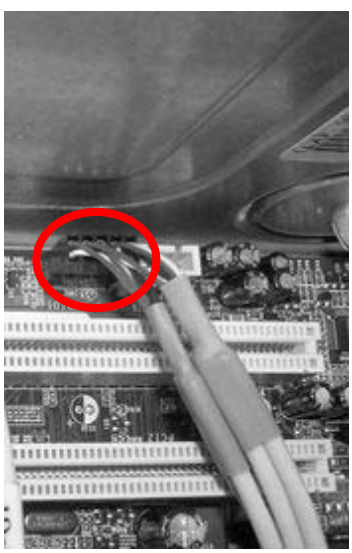


Removing the Cables

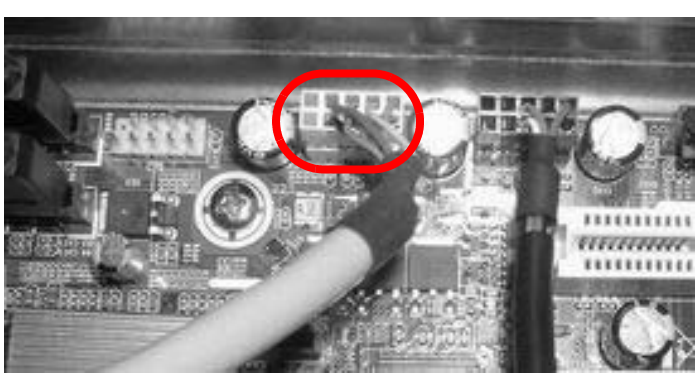
1. Disconnect teh front bezel LED cable from the main board.



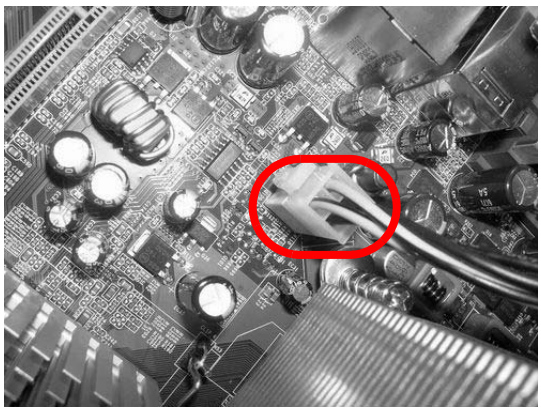
2. Disconnect the audio cables from the main board.



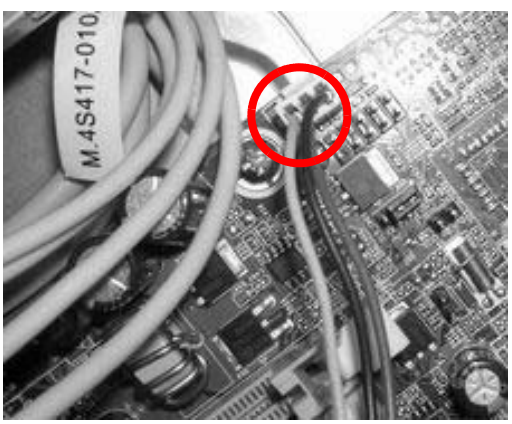
3. Then disconnect the USB cable from the main board.



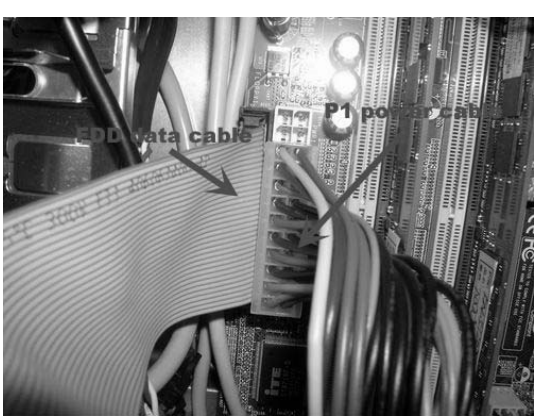
4. Disconnect PA power cable as shown.



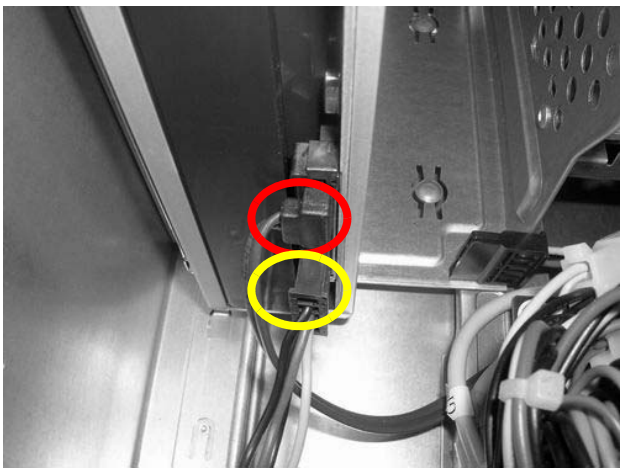
5. Then disconnect PD power cabel from the main board.



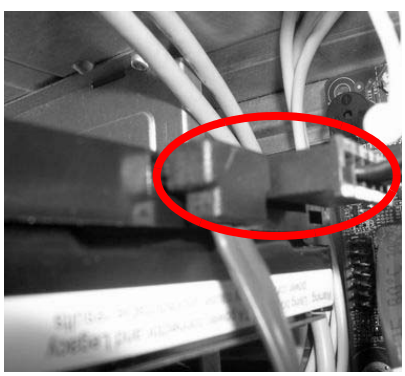
6. Disconnect FDD data cable and P1 power cable.



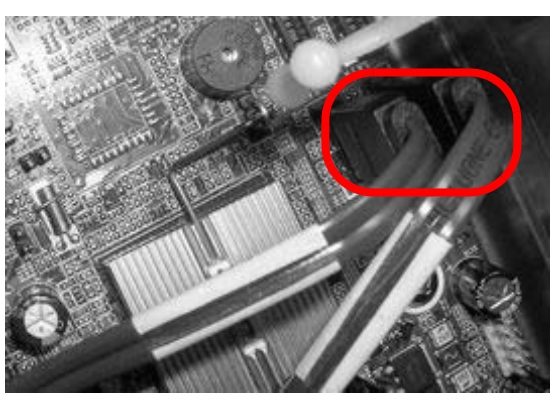
7. Disconnect the ODD data (highlighted with red circle) and ODD power (highlighted with yellow circle) cable.



8. Disconnect the HDD power and data cable.

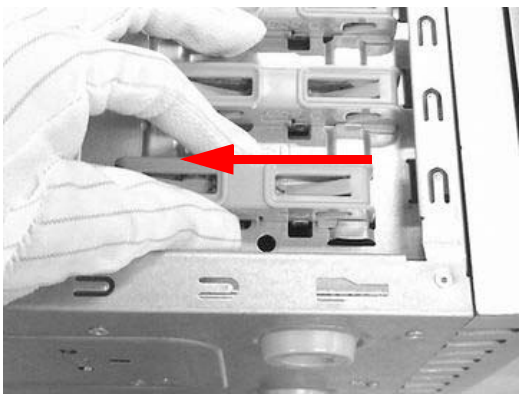


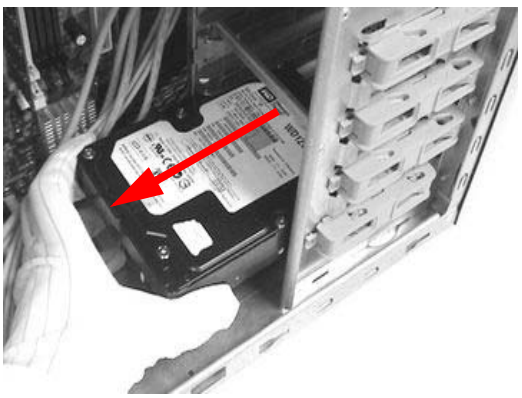
9. Disconnect the HDD power and data cable from the main board and remove the cables.



Removing the HDD Module

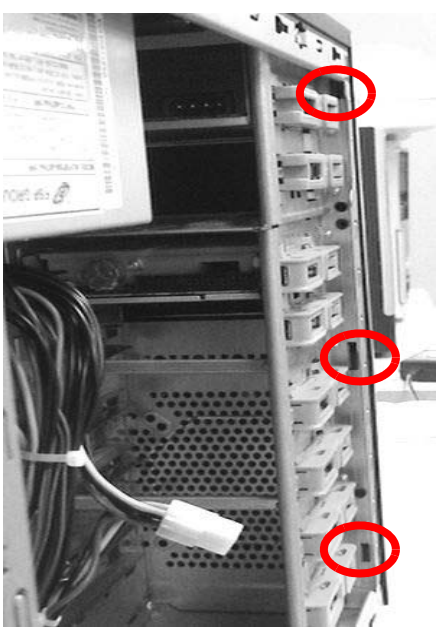
1. Slide the HDD holder as shown and remove the HDD module from the chassis.





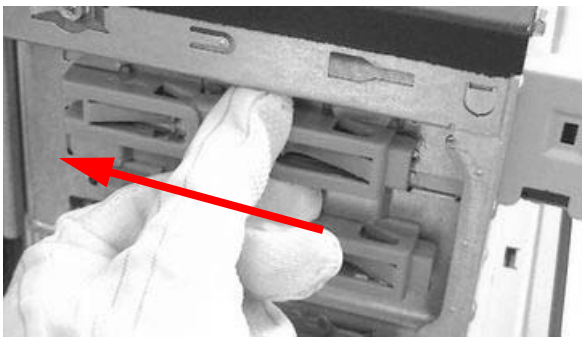
Removing the Front Bezel

1. Release the chassis lock as shown then detach the front bezel carefully.

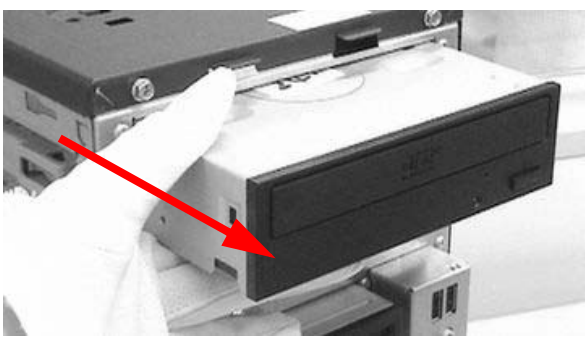


Removing the ODD Module and the Card Reader

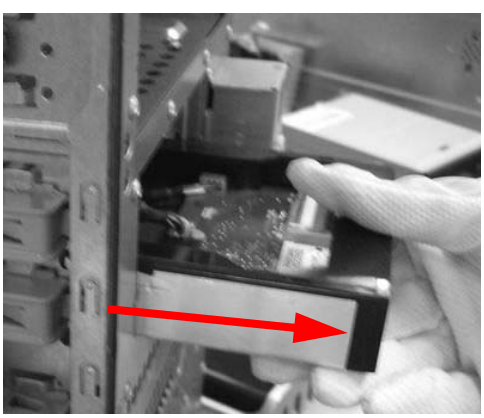
1. Slide the ODD holder as shown.



2. Detach the ODD module from the chassis.

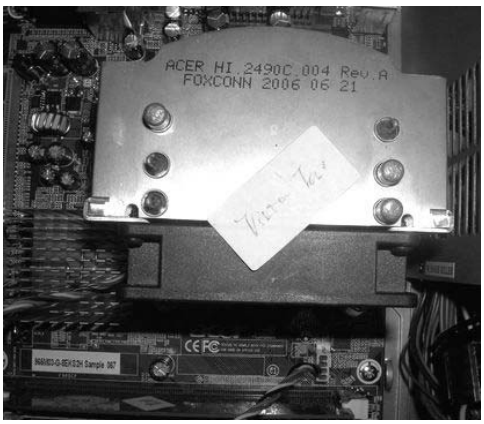


3. Detach the card reader carefully.

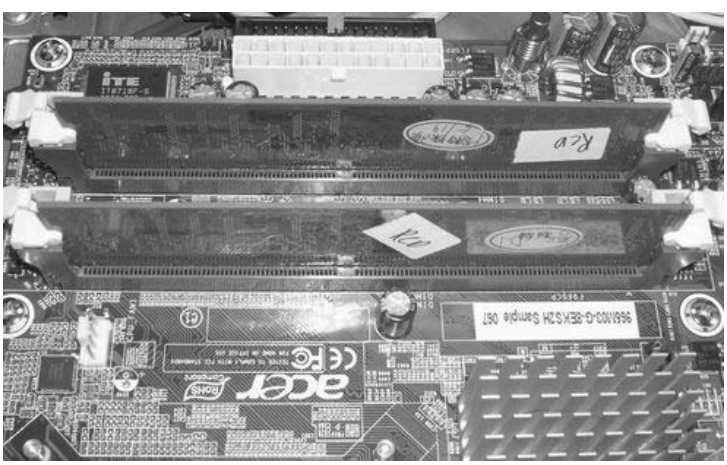


Removing the CPU Cooler, Memory and the System Fan

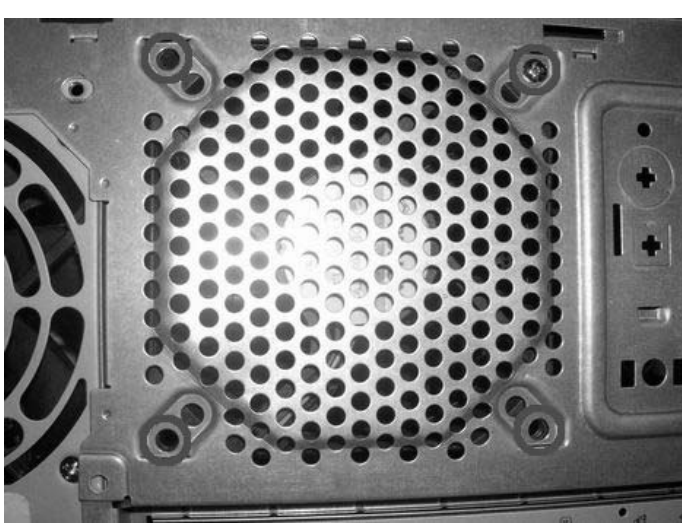
1. Remove the screws holding the CPU cooler then detach the CPU cooler from the main board.



2. Pop out the memory modules and remove them from the memory sockets.

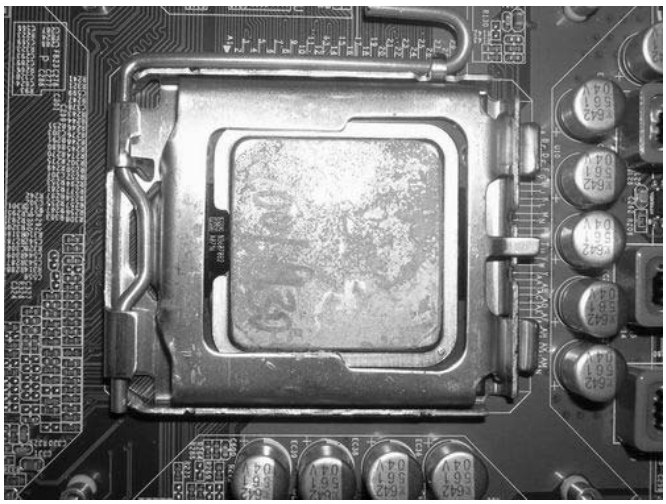


3. Remove the four screws fastening the system fan then detach the system fan.

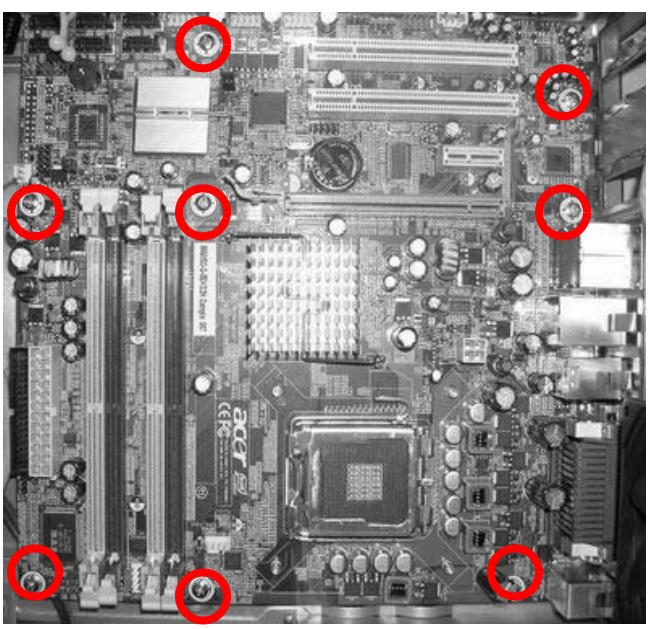


Removing the CPU, Main Board, and the Power Supply

1. Release the CPU lock then remove the CPU from the socket.



2. Remove the eight screws holding the main board and detach the main board carefully.



3. Remove the four screws holding the power supply.

4. Then remove the power supply from the chassis.

Veriton 5900Pro Disassembly Procedure

Opening the System

1. Place the system on a flat surface.

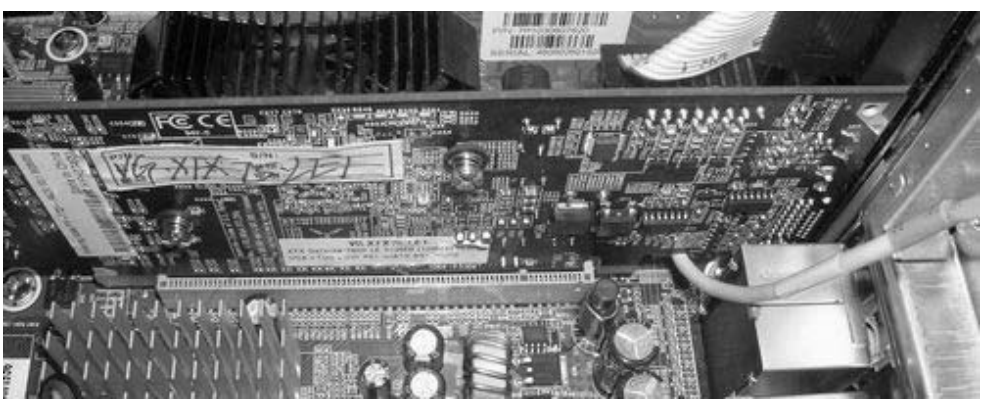
2. Remove the two screws fastening the top cover.

3. Slide the top cover and remove it. Then detach the front bezel as well.

4. Remove the screw holding the top bracket then take out the top bracket.

Removing the VGA Card

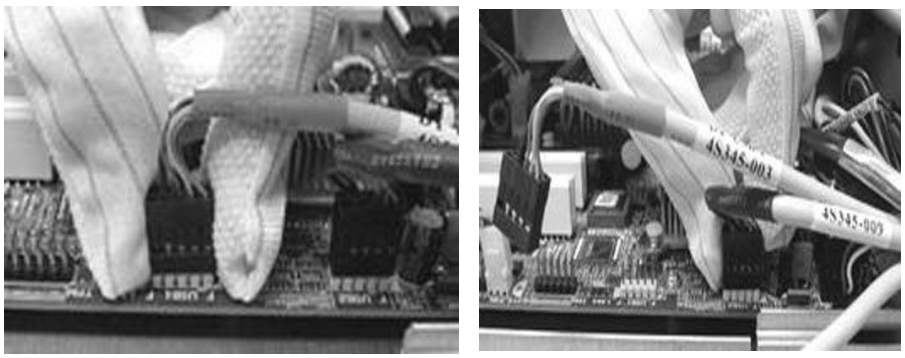
1. Carefully remove the VGA card from the main board.



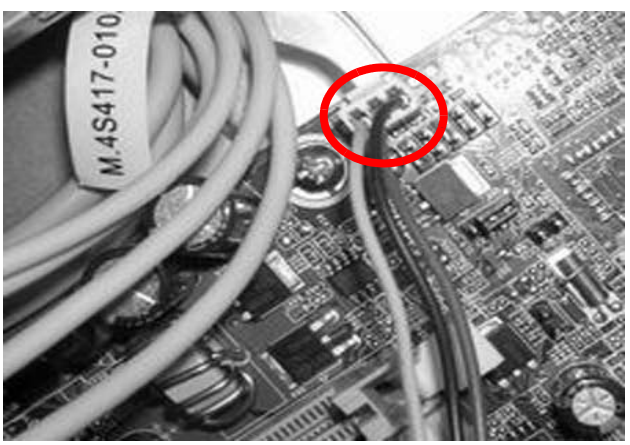
Removing the Cables

1. Disconnect the audio cable.

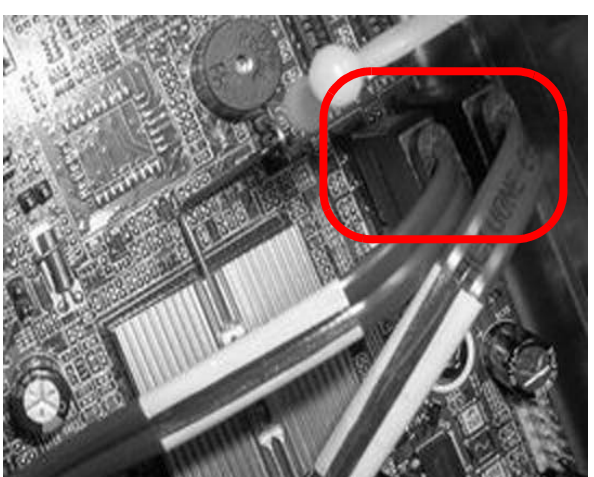
2. Disconnect the USB 1&2 cables.



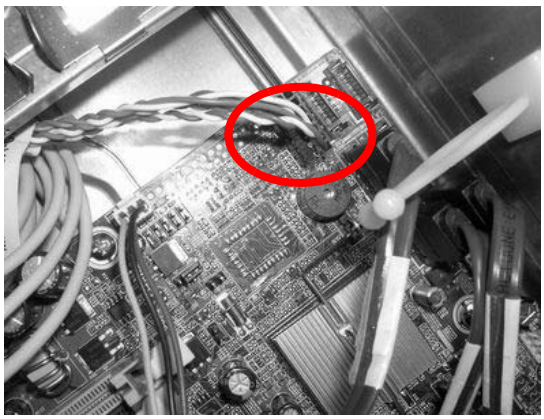
3. Disconnect the system fan cable from the main board.



4. Disconnect the HDD SATA1&2 cables.

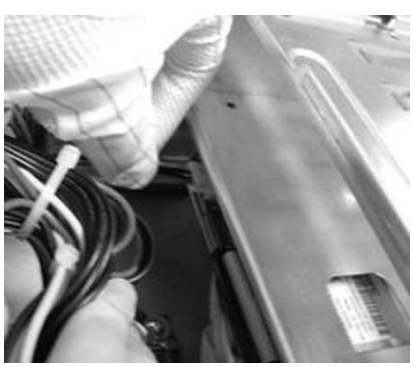


5. Disconnect the LED cable and the power switch connector



6. Disconnect the power to optical drive and IED cable as shown.

7. Disconnect power to FDD cable and FDD IDE cable from FDD module's rear side.



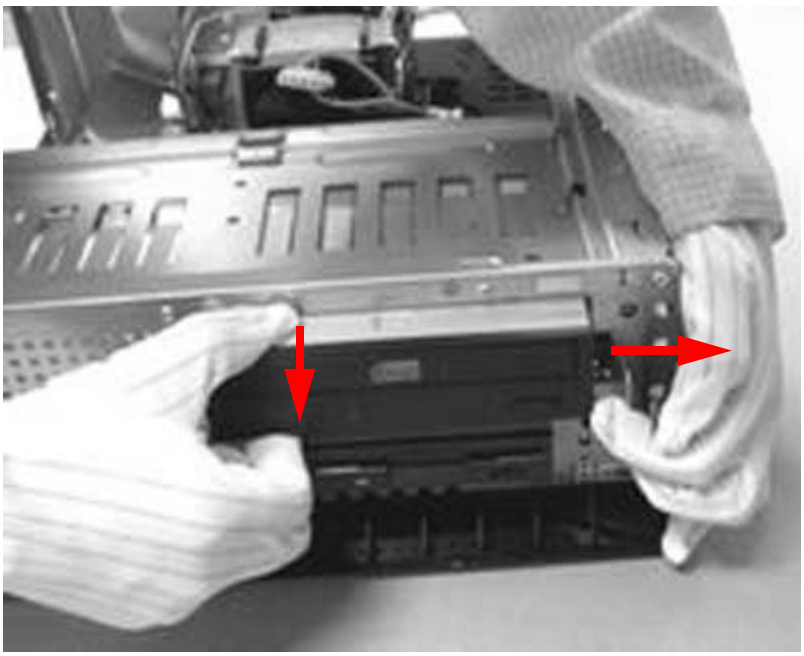
8. Disconnect the power to HDD cable and HDD SATA cable from the rear side of the HDD module.

9. Disconnect the main ATX power connector shown bellow.

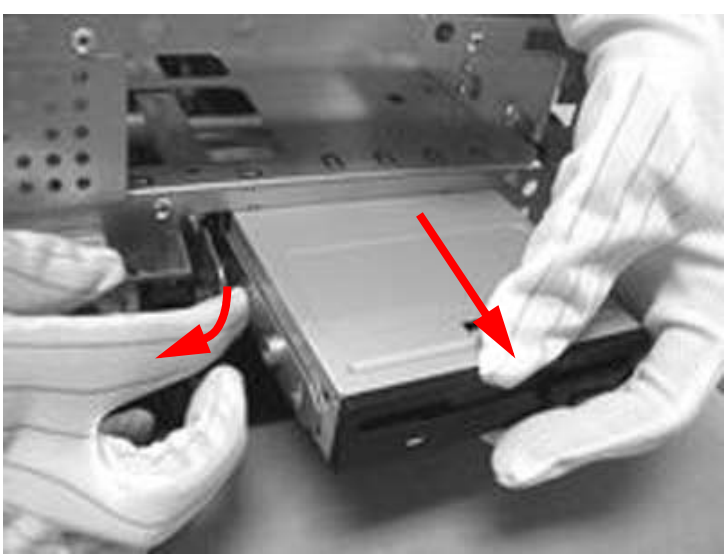
10. Disconnect the FDD IDE cable connector as shown.

Removing the CD Drive, the FDD and the HDD

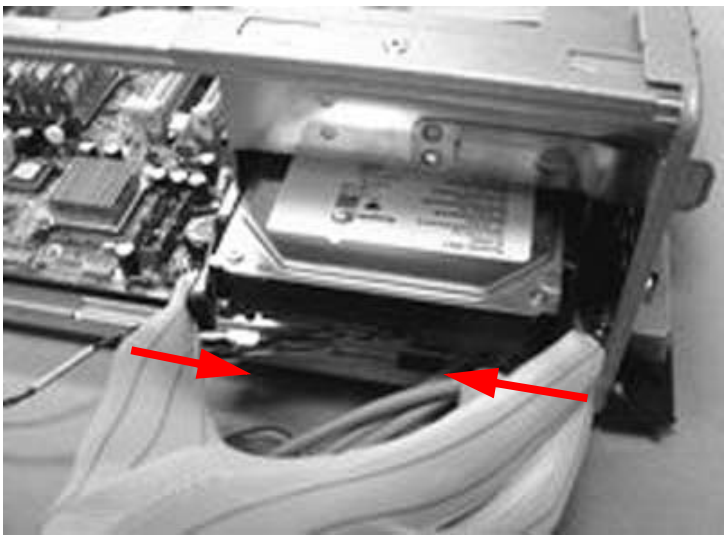
1. Release the CD drive latch and pull out the CD drive as shwon.



2. Release the FDD latch then pull out the FDD module from the chassis.



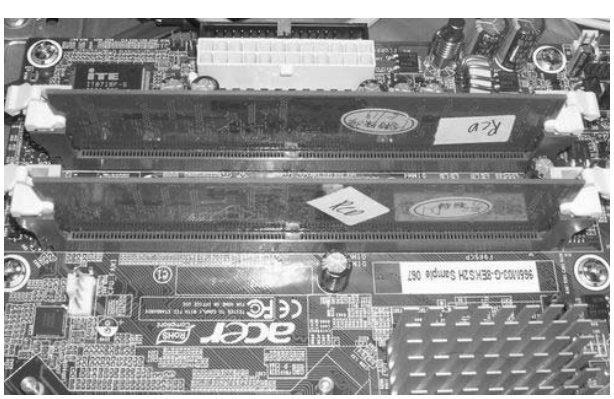
3. Release the HDD latch then pull out the HDD module.



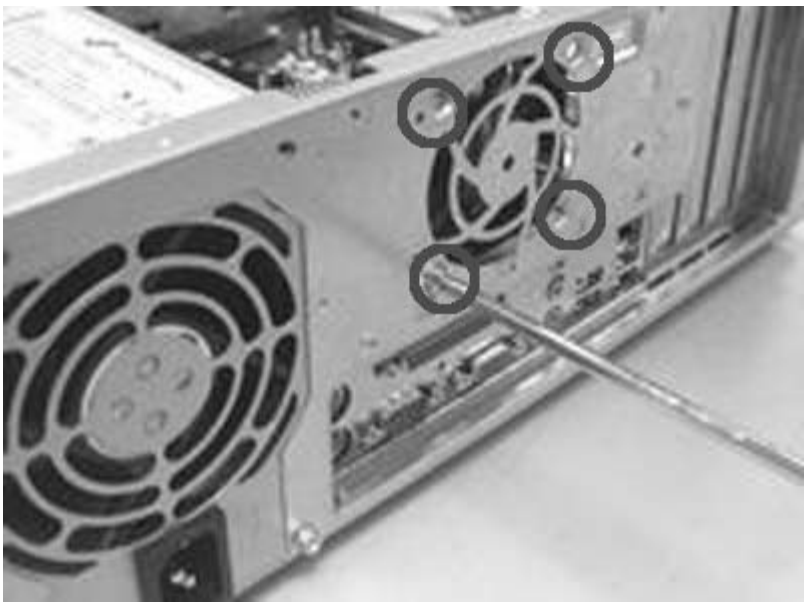
Removing the Heatsink Module, the Memory and the System Fan

1. Remove the four screws holding the heatsink and then remove the heatsink.

2. Pop out the memory modules and remove them from the sockets.



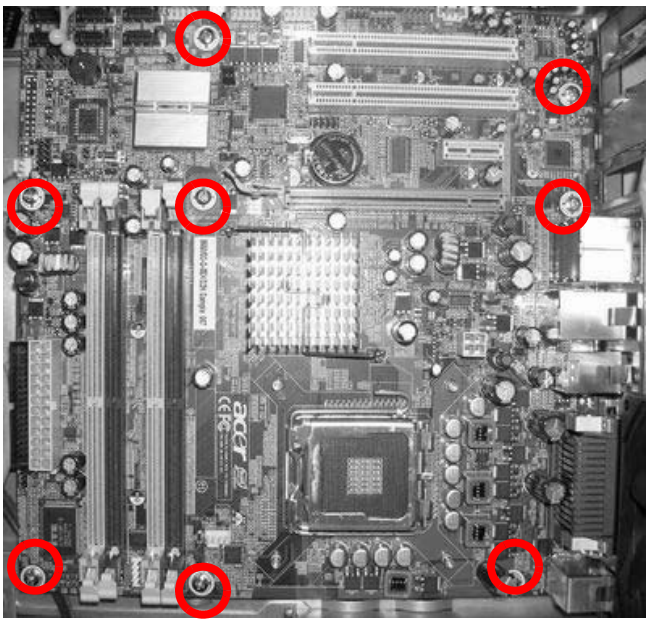
3. Remove the four screws holding the system fan.



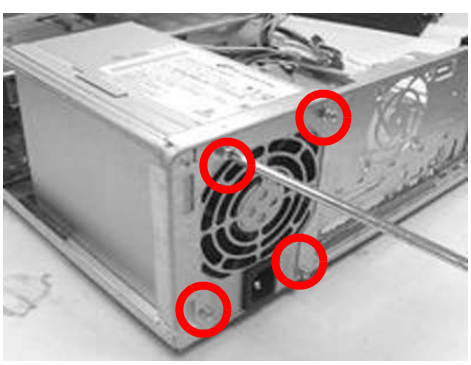
4. Detach the system fan.

Removing the Main Board, the Power Supply, USB Module and the LED Module

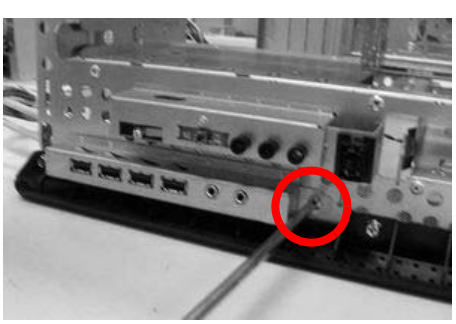
1. Remove the eight screws then detach the main board carefully.

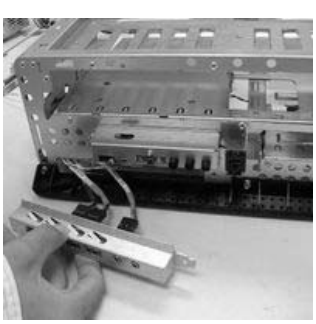


2. Remove the four screws holding the power supply then remove the power supply.

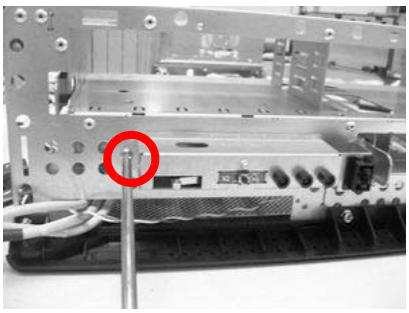


3. Remove the screw holding the USB module then detach the USB module.





4. Remove the screw fastening the LED module then detach the LED module.



Troubleshooting

This chapter provides troubleshooting information for the Veriton 7900Pro/6900Pro/5900Pro

- Power-On Self-Test (POST)
- Index of Error Message
- Index of Error Symptoms
- Undetermined Problems

Power-On Self-Test (POST)

Each time you turn on the system, the Power-on Self Test (POST) is initiated. Several items are tested during POST, but is for the most part transparent to the user.

The Power-On Self Test (POST) is a BIOS procedure that boots the system, initializes and diagnoses the system components, and controls the operation of the power-on password option. If POST discovers errors in system operations at power-on, it displays error messages on screen, generates a check point code at port 80h or even halts the system if the error is fatal.

The main components on the main board that must be diagnosed and/or initialized by POST to ensure system functionality are as follows:

- Microprocessor with built-in numeric co-processor and cache memory subsystem
- Direct Memory Access (DMA) controller
- Interrupt system
- Three programmable timers
- ROM subsystem
- RAM subsystem
- CMOS RAM subsystem and real time clock/calendar with battery backup
- Onboard parallel interface controller
- Embedded hard disk interface and one diskette drive interface
- Keyboard and auxiliary device controllers
- 1.44M floppy controller
- I/O ports
  - One parallel port
  - One PS/2-compatible mouse port
  - One PS/2-compatible keyboard port

NOTE: When Post executes a task, it uses a series of preset numbers called check points to be latched at port 80h, indicating the stages it is currently running. This latch can be read and shown on a debug board.

The following table describes the BIOS common tasks carried out by POST. Each task is denoted by an unique check point number. For other unique check point numbers that are not listed in the table, refer to the corresponding product service guide.

Post Checkpoints List: The list may vary accordingly depending on your BIOS

.

Checkpoint	Description
CFh	Test CMOS R/W functionality
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
01h	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved

.

Checkpoint	Description
03h	Initial Superio_Early _Init switch
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved
0Ah	1. Disable PS/2 mouse interface (optional) 2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). 3. Reset keyboard for Winbond 977 series Super I/Q chips.
0Bh	Reserved
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial Early_Init_Onboard_Generator switch.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686)
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial Early_PM_INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved

.

Checkpoint	Description
23h	1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. 2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead. 3. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information. 4. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 5. Early PCI initialization -Enumerate PCI bus number -Assign memory & I/O resource -Search for a valid VGA device and VGA BIOS, and put it into C000:0
24h	Reserved
25h	Reserved
26h	Reserved
27h	Initialize INT 09 buffer
28h	Reserved
29h	1. Program CPU internal MTRR (P6 & PII) for 0-640K memory address. 2. Initialize the APIC for Pentium class CPU. 3. Program early chipset according to CMOS setup. Example: onboard IDE controller. 4. Measure CPU speed. 5. Invoke video BIOS.
2Ah	Reserved
2Bh	Reserved
2Ch	Reserved
2Dh	1. Initialize multi-language 2. Put information on screen display, including Award title, CPU type, CPU speed...
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard except Winbond 977 series Super I/O chips.
34h	Reserved
35h	Reserved
36h	Reserved
37h	Reserved
38h	Reserved
39h	Reserved
3Ah	Reserved
3Bh	Reserved

.

Checkpoint	Description
3Ch	Test 8254.
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2
41h	Reserved
42h	Reserved
43h	Test 8259 functionality
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K. 2. Program writes allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	1. Program MTRR of M1 CPU. 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved
50h	Initialize USB
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Reserved
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved

.

Checkpoint	Description
5Dh	1. Initialize Init_Onboard_Super_IO switch. 2. Initialize Init_Onboard_AUDIO switch.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reserved
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved
6Bh	Program chipset registers according to items described in Setup& Auto-configuration table.
6Ch	Reserved
6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to “AUTO”
6Eh	Reserved
6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40: hardware.
70h	Reserved
71h	Reserved
72h	Reserved
73h	(Optional Feature) Enter AWDFLASH.EXE if: -AWDFLASH is found in floppy drive -ALT+F2 is pressed
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP,CDROM.....
76h	Reserved
77h	Detect serial ports & parallel ports
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Reserved
7Dh	Reserved

.

Checkpoint	Description
7Eh	Reserved
7Fh	1. Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: Clear EPA or customization logo.
80h	Reserved
81h	Reserved
82h	1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen logo) 3. If password is set, ask for password.
83h	Save all data in stack back to CMOS.
84h	Initialize ISA PnP boot devices.
85h	1. USB final Initialization 2. NET PC: Build SYSID structure 3. Switch screen back to text mode. 4. Set up ACPI table at top of memory. 5. Invoke ISA adapter ROMs. 6. Assign IRQs to PCI devices 7. Initialize APM 8. Clear noise of IRQs
86h	Reserved
87h	Reserved
88h	Reserved
89h	Reserved
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	1. Enable L2 cache 2. Program boot up speed 3. Chipset final initialization 4. Power management final initialization 5. Clear screen & display summary table 6. Program K6 write allocation 7 Program P6 class write combining.
95h	1. Program daylight saving 2. Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick 5. Build MSIRQ routing table
FFh	Boot attempt (INT 19h)

POST Error Messages List

If you cannot run the diagnostics program tests but did receive a POST error message, use “POST Error Messages List” to diagnose system problems. If you did not receive any error message, look for a description of your error symptoms in “Error Symptoms List” on page 96.

NOTE: When you have deemed it necessary to replace an FRU, and have done so, you must run a total system check to ensure that no other activity has been affected by the change. This system check can be done through the diagnostics program.

NOTE: Check all power supply voltages, switch, and jumper settings before you replace the main board. Also check the power supply voltages if you have a “system no-power” condition.

If you are unable to correct the problem by using the “BIOS Messages List” table and “Error Symptoms List” table, go to “Undetermined Problems”.

To diagnose a problem, first find the BIOS error messages in the left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/FRU listed in right column is the most likely cause.

BIOS Messages	Action/FRU
BIOS ROM checksum error - System halted	The checksum of the BIOS code in the BIOS chip is incorrect, indicating the BIOS code may have become corrupt. Contact your system dealer to replace the BIOS.
CMOS Battery Failed	The CMOS battery is no longer functional. Contact your system dealer for a replacement the BIOS.
CMOS Checksum Error- defaults loaded	Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. A weak battery may have caused this error. Check the battery and replace if necessary.
CPU at nnnn	Displays the running speed of CPU.
Display switch is set incorrectly	The display switch on the motherboard can be set to either monochrome or color. This message indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the Video selection.
Press ESC to skip memory test	The user may press Esc to skip the full memory test.
Floppy disk(s) fail	Cannot find or initialize the floppy drive controller or the drive. Make sure the controller is installed correctly, if no floppy drives are installed, be sure the Diskette Drive selection in Setup is set to NONE or AUTO.
HARD DISK initializing - Please wait a moment	Some hard drives require extra time to initialize.
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard drive controller or the drive. Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive Selection in Setup is set to NONE.
Hard disk(s) diagnosis fail	The system may run specific disk diagnostic routines. This message appears if one or more hard disks return an error when the diagnostics run.

BIOS Messages	Action/FRU
Keyboard Error Or No Keyboard Present	Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.
Keyboard is locked out - Unlock the key	This message usually indicates that one or more keys have been pressed during the keyboard tests. Be sure no objects are resting on the keyboard.
Memory Test:	This message displays during a full memory test, counting down the memory areas being tested.
Memory test fail	If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error.
Override enabled - Defaults loaded	If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration with a set of BIOS defaults designed for the most stable, minimal-performance system operations.
Press TAB to show POST screen	System OEMs may replace the Phoenix Technologies Award BIOS POST display with their own proprietary display. Including this message in the OEM display permits the operator to switch between the OEM display and the default POST display.
Primary master hard disk fail	POST detects an error in the primary master IDE hard drive.
Primary slave hard disk fail	POST detects an error in the secondary master IDE hard drive.
Secondary master hard disk fail	POST detects an error in the primary slave IDE hard drive.
Secondary slave hard disk fail	POST detects an error in the secondary slave IDE hard drive.

Error Symptoms List

NOTE: To diagnose a problem, first find the error symptom in the left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/ FRU listed in right column is the most likely cause.

Error Symptom	Action/FRU
Processor / Processor Fan	
NOTE: Normally, the processor fan should be operative, and the processor clock setting should be exactly set to match its speed requirement before diagnosing any processor problems.	
Processor fan does not run but power supply fan runs.	1. Ensure the system is not in power saving mode. See “Power Management” in chapter 2. 2. With the system power on, measure the voltage of processor fan connector. Its reading should be +12Vdc. Its reading should be +12Vdc. If the reading shows normal, but the fan still does not work, then replace a good fan. 3. Main board.
Processor test failed.	1. Processor. 2. Main board.
Main board and Memory	
NOTE: Ensure the memory modules are installed properly and the contact leads are clean before diagnosing any system problems.	
Memory test failed.	1. See "Memory" 2. Main board
Incorrect memory size shown or repeated during POST.	1. Insert the memory modules in the DIMM sockets properly, then reboot the system. 2. Memory module. 3. Main board.
System works but fails to enter power saving mode when the `Power Management Mode` is set to `Enabled`.	1. Enter BIOS Setup and load default settings. In Windows Systems, check settings in Power Management Property of Control Panel. 2. Reload software from Recovery CD.
Blinking cursor only; system does not work.	1. Diskette/IDE drive connection/cables 2. Diskette/IDE disk drives 3. See “Undetermined Problems”. 4. Main board
Diskette Drive	
NOTE: Ensure the diskette drive is auto-setting in BIOS Setup and its read/write head is clean before diagnosing any diskette drive problems.(If only one drive is installed, please make sure the drive is connected to master connector or the drive is set to master.)	
Media and drive are mismatched.	1. Ensure the diskette drive is configured correctly in the Disk Drives of BIOS Setup. 2. Ensure the diskette drive is correctly formatted. 3. Diskette drive connection/cable 4. Diskette drive 5. Main board
Diskette drive does not work.	1. Ensure the diskette drive is not set to `None` in the Disk Drives of BIOS Setup. 2. Diskette drive power 3. Diskette drive connection/cable 4. Diskette drive 5. Main board

Error Symptom	Action/FRU
Diskette drive read/write error.	1. Diskette. 2. Diskette drive cable. 3. Diskette drive. 4. Main board.
Diskette drive LED comes on for more than 2 minutes when reading data.	1. Diskette 2. Diskette drive connection/cable 3. Diskette drive 4. Main board
Diskette drive LED fails to light, and the drive is unable to access for more than 2 minutes.	1. Diskette 2. Diskette drive power 3. Diskette drive connection/cable 4. Diskette drive 5. Main board
Diskette drive test failed.	1. Diskette 2. Diskette drive 3. Diskette drive cable 4. Main board
Hard Disk Drive	
NOTE: Ensure hard disk drive is configured correctly in BIOS Setup, cable/jumper are set correctly before diagnosing any hard disk drive problems. (If only one drive is installed, please make sure the drive is connected to master connector or the drive is set to master.)	
Hard disk drive test failed.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive cable. 3. Hard disk drive. 4. Main board.
Hard disk drive cannot format completely.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive cable. 3. Hard disk drive. 4. Main board.
Hard disk drive has write error.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive.
Hard disk drive LED fails to light, but system operates normally.	1. With the system power on, measure the voltage of hard disk LED connector. 2. Hard drive LED cable.
CD/DVD-ROM Drive	
NOTE: Ensure CD/DVD-ROM drive is configured correctly in BIOS Setup, cable/jumper are set correctly and its laser beam is clean before diagnosing any CD/DVD-ROM drive problems.	
CD/DVD-ROM drive LED doesn't come on but works normally.	1. CD/DVD-ROM drive
CD/DVD-ROM drive LED flashes for more than 30 seconds before LED shutting off. Software asks to reinstall disc. Software displays a reading CD/DVD error.	1. CD/DVD-ROM may have dirt or foreign material on it. Check with a known good disc. 2. CD/DVD-ROM is not inserted properly. 3. CD/DVD-ROM is damaged.
CD/DVD-ROM drive cannot load or eject when the system is turned on and its eject button is pressed and held.	1. Disconnect all cables from CD/DVD-ROM drive except power cable, then press eject button to try to unload the disk. 2. CD/DVD-ROM drive power. 3. CD/DVD-ROM drive

Error Symptom	Action/FRU
CD/DVD-ROM drive does not read and there are no messages are displayed.	1. CD may have dirt or foreign material on it. Check with a known good disc. 2. Ensure the CD/DVD-ROM driver is installed properly. 3. CD/DVD-ROM drive.
CD/DVD-ROM drive can play audio CD but no sound output.	1. Ensure the headphone jack of the CD/DVD-ROM has an output. 2. Turn up the sound volume. 3. Speaker power/connection/cable. 4. CD/DVD-ROM drive.
Real-Time Clock	
Real-time clock is inaccurate.	1. Ensure the information in the `Standard CMOS Feature` of BIOS Setup is set correctly. 2. RTC battery. 3. Main board
Audio	
Audio software program invokes but no sound comes from speakers.	1. Speaker power/connection/cable.
Modem	
Modem ring cannot wake up system from suspend mode.	1. For the External Modem, make sure Power on By Ring in BIOS Setup or Power Management is set to Enabled. For the PCI modem, make sure Wake up by PCI card is set to Enabled. 2. If PCI modem card is used, reinsert the modem card to PCI slot firmly or replace the modem card. 3. In Win 98, ensure the telephone application is configured correctly for your modem and set to receive messages and/or fax.
Data/fax modem software program invokes but cannot receive/send data/ fax	1. Ensure the modem card is installed properly.
Fax/voice modem software program invokes but has no sound output. (Data files are received normally; voice from modem cannot be produced, but system sound feature works normally.)	1. Ensure the modem voice-in cable from modem adapter card to main board
Video and Monitor	
Video memory test failed. Video adapter failed.	1. Remove all non-factory-installed cards. 2. Load default settings (if screen is readable). 3. Main board
Display problem: - Incorrect colors No high intensity Missing, broken, or incorrect characters Blank monitor (dark) Blank monitor (bright) Distorted image Unreadable monitor Other monitor problems	1. Monitor signal connection/cable. 2. Monitor 3. Video adapter card 4. Main board
Display changing colors.	1. Monitor signal connection/cable 2. Monitor 3. Main board

Error Symptom	Action/FRU
Display problem not listed above (including blank or illegible monitor).	1. “Monitor" 2. Load default settings (if screen is readable). 3. Main board

Error Symptom	Action/FRU
Parallel/Serial Ports	
Execute “Load BIOS Default Settings” in BIOS Setup to confirm ports presence before diagnosing any parallel/serial ports problems.	
Serial or parallel port loop-back test failed.	1. Make sure that the LPT# or COM# you test is the same as the setting in BIOS Setup. 2. Loop-back. 3. Main board.
Printing failed.	1. Ensure the printer driver is properly installed. Refer to the printer service manual. 2. Printer. 3. Printer cable. 4. Main board.
Printer problems.	1. Refer to the service manual for the printer.
Keyboard	
Some or all keys on keyboard do not work.	1. Keyboard
Power Supply	
Pressing power switch does not turn off system. (Only unplugging the power cord from electrical outlet can turn off the system.)	1. Ensure the `Soft-off by PWR-BTTN.` in BIOS Setup of `Power Management` is not set to Instant-off. 2. Power switch cable assembly
Pressing power switch does not turn on the system.	1. Ensure the power override switch (situated at the back of the machine, just above the connector for the power cable) is not set to OFF. 2. Power switch cable assembly.
Executing software shutdown from Windows98 Start menu does not turn off the system. (Only pressing power switch can turn off the system).	1. Load default settings. 2. Reload software from Recovery CD.
No system power, or power supply fan is not running.	1. Power Supply 2. Main board
Other Problems	
Any other problems.	1. Undetermined Problems

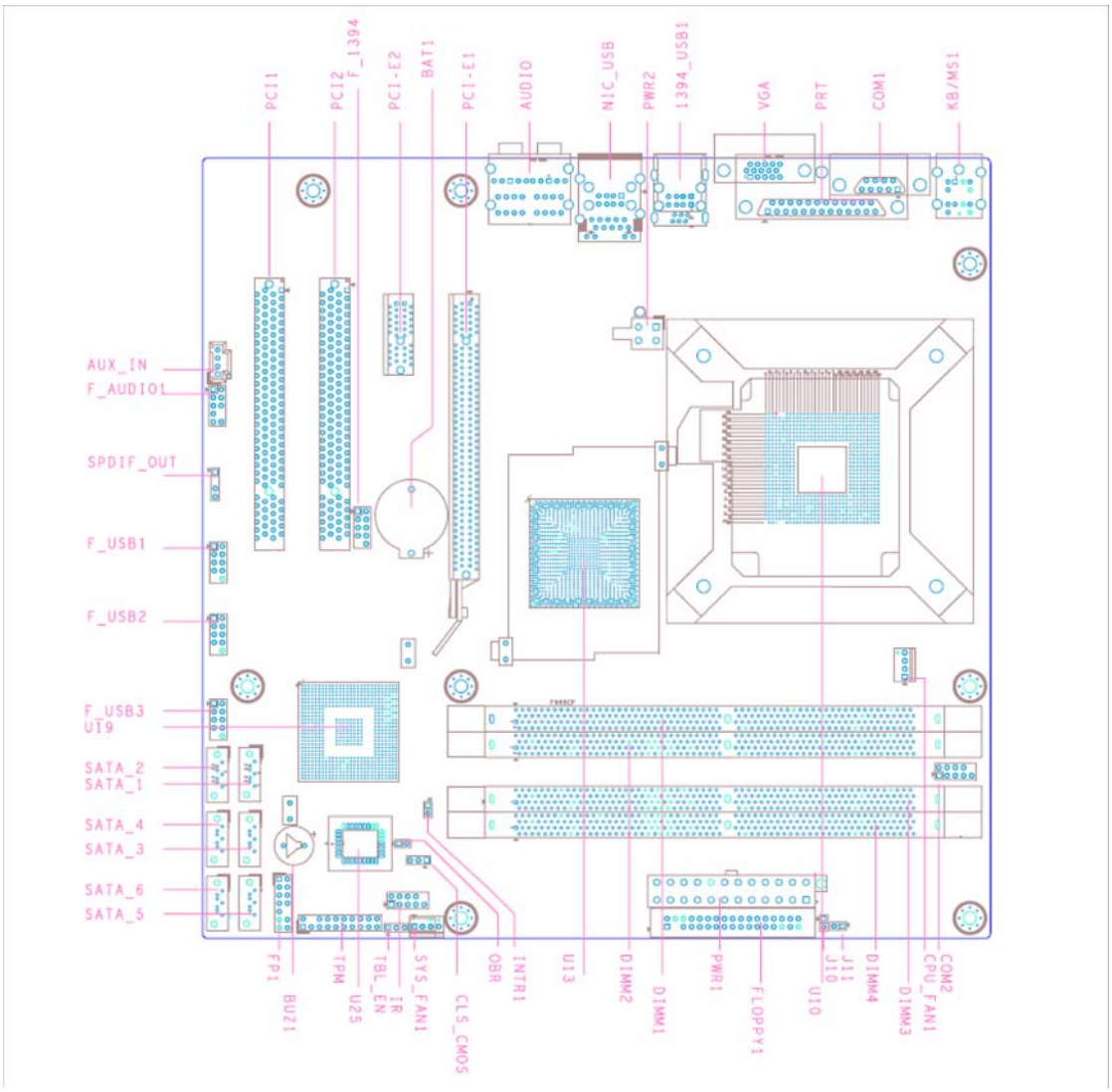
Undetermined Problems

If an error message is present, go to “POST Error Messages List” on page 94. If you did not receive any messages, if the symptom is listed in “or “Error Symptoms List” on page 96. If you still cannot solve the problem, continue with this check:

1. Check the power supply voltages. If the voltages are correct continue with the following steps:
2. Power off the system unit.
3. Perform the following checks, one by one, until you have isolated the problem FRU.
4. Load default settings in setup.
5. Check all main board jumper positions and switch settings.
6. Check all adapter card jumper positions.
7. Check all device jumper positions.
8. Check all cables and connectors for proper installation.
9. If the jumpers, switches and voltage settings are correct, remove or disconnect the following, one at a time:
10. Non-Acer devices
    - ❑ External devices
    - ❑ Any adapter card (modem card, LAN card or video card, if installed)
    - ❑ CD/DVD-ROM drive
    - ❑ Diskette drive
    - ❑ Hard disk drive
    - ❑ DIMM
    - ❑ Processor
    - ❑ Main board
11. Power on the system unit.
12. Repeat steps 2 through 5 until you find the failing device or adapter.

Jumper and Connector Information

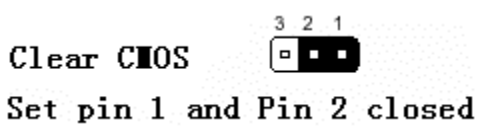
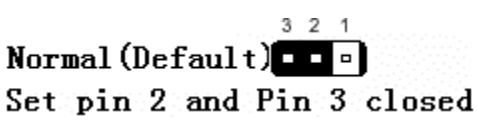
Main Board Layout



1	CPU_FAN1	CPU fan header	24	BIOS_SEL1	SPI & FWH BIOS select
2	COM2	COM Header 2	25	PWR2	4 pin power connector
3	J11	Acer special requirement	26	KB/MS1	Keyboard & Mouse PS2 port
4	J10	Acer special requirement	27	COM1	COM port
5	PWR1	24 pin power connector	28	PRT	Printer port
6	FLOPPY1	Floppy connector 1	29	VGA	VGA port
7	SYS_FAN1_1	System fan header 1_1(3 pin)	30	1394_USB1	1394 and USB*2 ports
8	CLR_CMOS	Clear CMOS	31	NIC_USB	Lan and USB*2 port

9	OBR	One Button Recovery	32	Audio	Audio port
10	INTR1	Chassis Intruder	33	PCI-E1	PCI-Express X16 connector
11	FP1	Front Panel Switch/LED	34	BAT1	Battery connector
12	TPM	Trusted Platform Module Interface	35	PCI-E2	PCI-Express X1 connector
13	SATA_5	SATA data transfer connector 5	36	F_1394	Front 1394 header
14	SATA_6	SATA data transfer connector 6	37	PCI1, PCI2	PCI connector
15	SATA_3	SATA data transfer connector 3	38	U25	FWH BIOS socket
16	SATA_4	SATA data transfer connector 4	39	U19	ICH8 series south bridge
17	SATA_1	SATA data transfer connector 1	40	U13	965 series north bridge
18	SATA_2	SATA data transfer connector 2	41	U10	LGA775 CPU socket
19	F_USB3	Front panel USB header 3	42	DIMM1,DIMM2,DIMM3,DIMM4	DDR2 memory connector
20	F_USB2	Front panel USB header 2	43	IR	Infrared function header
21	F_USB1	Front panel USB header 1‘	44	FLOPPY1	Floppy connector
22	F_AUDIO1	Front panel Audio header	45	BUZ1	Buzzer
23	AUX_IN	Audio Aux input			

CMOS Jumper (CLR_CMOS) Settings

Jumper	Description	Function
	1-2 closed	Clear CMOS
	2-3 closed	Normal (Default)

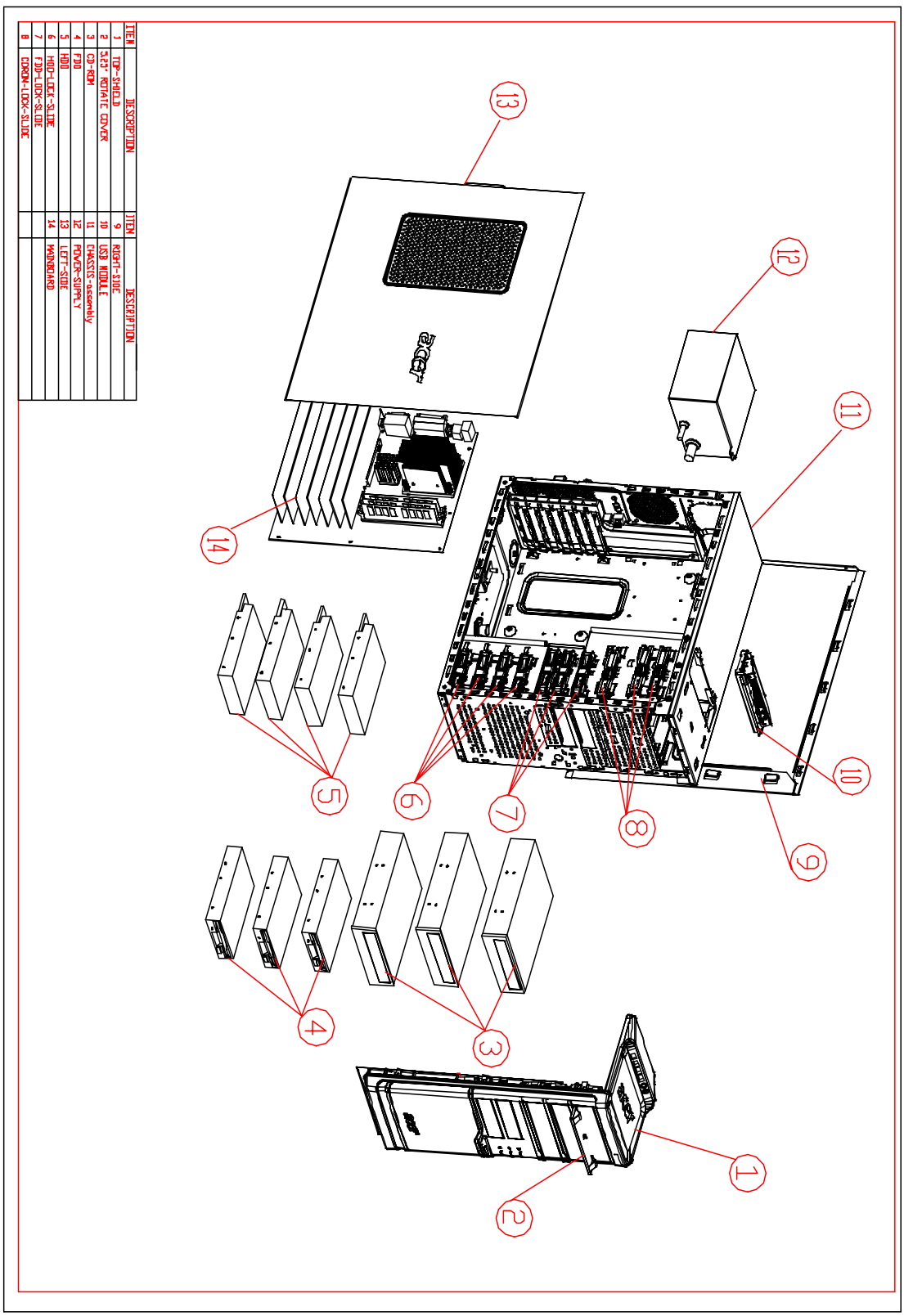
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of

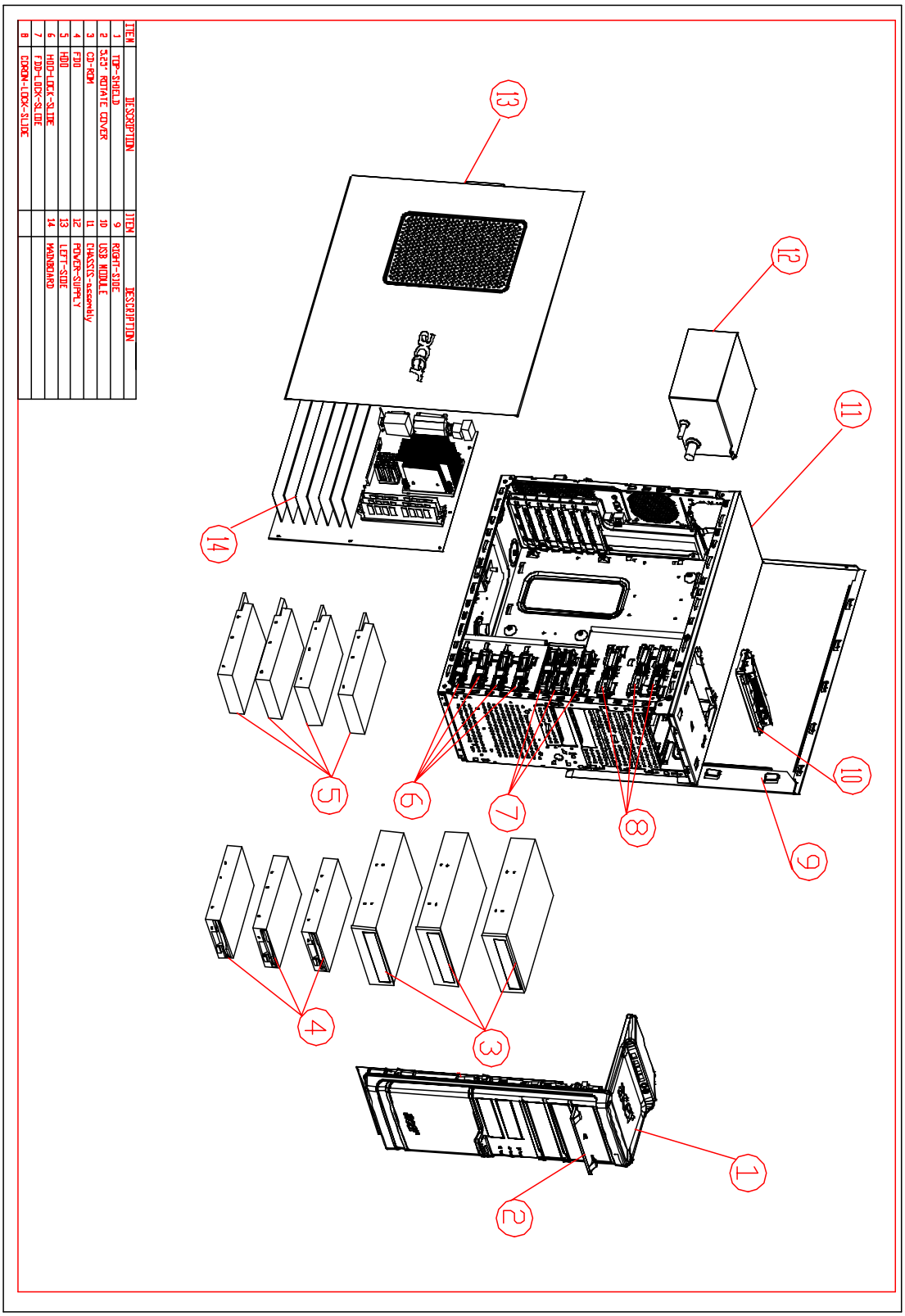
Veriton 7900Pro/6900Pro/5900Pro. Refer to this chapter whenever ordering for parts to repair or for RMA (Return

Merchandise Authorization).

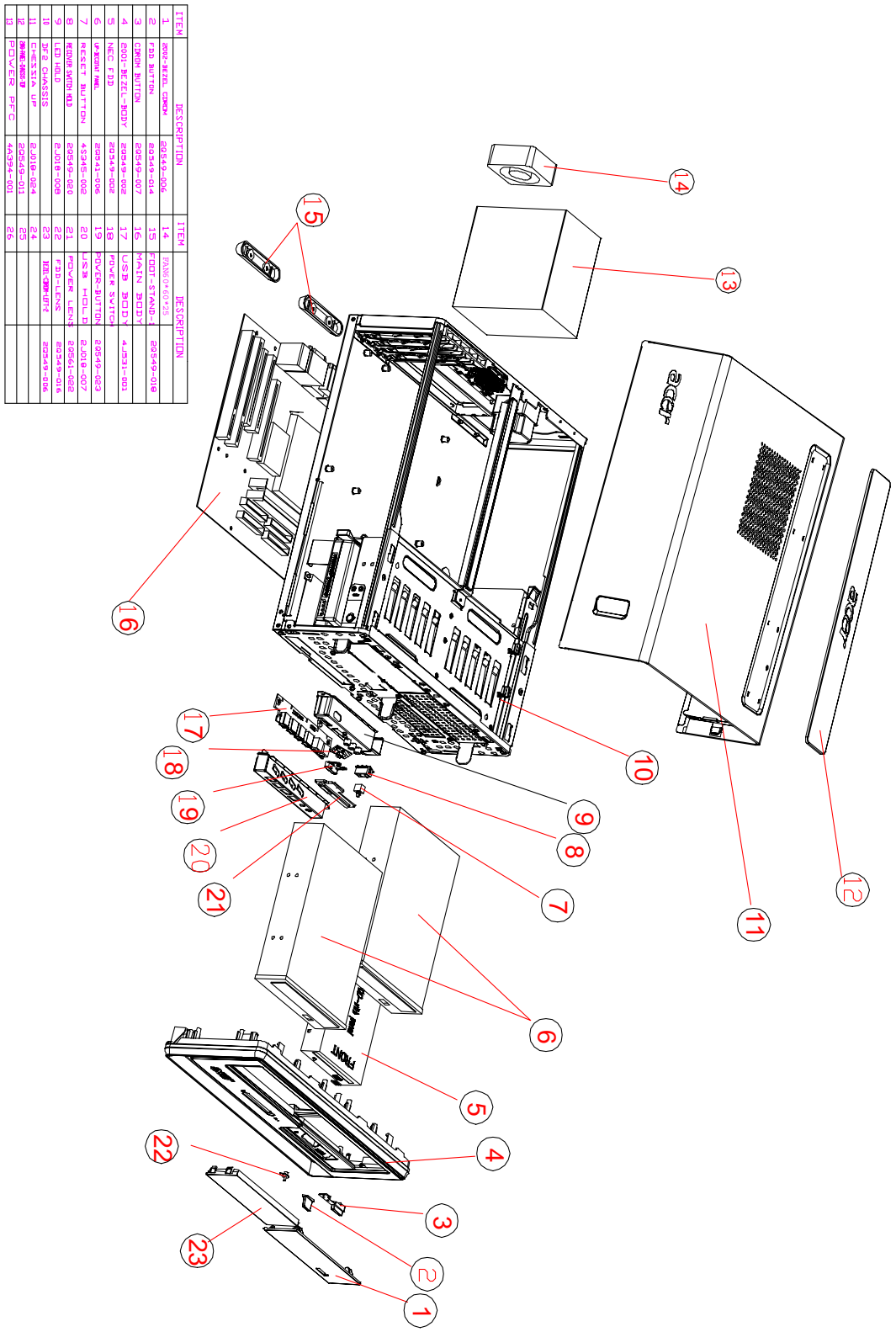
Veriton 7900Pro Exploded Diagram



Veriton 6900Pro Exploded Diagram



Veriton 5900Pro Exploded Diagram



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	2009 METAL COVER	14	POWER CORD
2	FDD BUTTON	15	FOOT-STAND-1
3	CDROM BUTTON	16	MAIN BODY
4	2001-BEZEL-BODY	17	USB BOD Y
5	NEC FDD	18	POWER SWITCH
6	LABEL PWR	19	POWER BUTTON
7	RESET BUTTON	20	USB HOLD
8	RDOOR WITH ADD	21	PCI-LOCK LEN+
9	LED HOLD	22	FDD-LENS
10	IDE CHASSIS	23	HDD CAGE ASSY
11	CHASSIS UP	24	
12	[illegible]	25	
13	POWER PFC	26	

Parts

NOTE: Please note WHEN ORDERING FRU PARTS you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how best to dispose it, or follow the rules set by your regional Acer office on how to return it.

NOTE: Veriton 7900Pro/6900Pro/5900Pro spare part list is not ready as the service guide released. We will update the spare part list as soon as possible.